The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XXXIX. CHICAGO, ILLINOIS, SEPTEMBER 27, 1902. No. 13.

Address.

HOSPITALS FOR THE NEUROPATHIC AND PSYCHOPATHIC.*

CHAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON NERVOUS AND MENTAL DISEASES, AT THE FIFTY-THIRD ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, AT SARATOGA SPRINGS, N. Y., JUNE 10-13, 1902.

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WAUWATOSA, WIS.

The development of institutions for nervous and mental maladies forms no exception to the rule that increased complexity (and perplexity) follows the process of finer adaptation to the requirements of advancing medical science and social evolution. Change and growth are so rapid that the conservatism which necessarily characterizes all institutions, keeps them lagging behind in the advances of the day in the art and science of both neurology and psychiatry.

It is not necessary to prove in this audience that there is in our own time a very great increase of nervous diseases, both in variety of forms and in the number of sufferers. The same is also true of mental diseases, and hence the subject of provision for patients of this class is a pressing one in all our communities. In this paper I seek to consider only hospital treatment largely for recent and curable cases. Thus far it has been principally only where mental integrity was impaired that separate provision has been made; as in the separate institutions for insane, the feeble-minded and the epileptic, and even these classes were, in the first instance, separated from the community only because they were a menace or an annoyance in the commonwealth, and not for their own welfare or for curative treatment. Considering for a moment the case of the psychopathic, the mere utterance of a few words will illustrate to you the history of provision for mental maladies. The terms "demoniac," "lunatic," "insane" and "psychopathic" correspond to the "jail, "asylum," the "hospital," and now, I may add (to coin a word), the "psychiatrium," or the "psychopathic hospital," which is growing up before our eyes. The word "Bethlem" is a history in itself. The "Bethlem Royal Hospital" in London began to receive the insane in the fifteenth century, and from that time until the beginning of the nineteenth it was a place of horrors and suffering inconceivable. Until a comparatively recent time it was visited by the public as a show or "menagerie," and, like the latter, was subject to a "stirring up of the animals" in their cages and a rattling of their chains for the amusement of the crowd. Even to-day something of this idea survives in the unenlightened mind. Though the day of the cell and manacle has passed by, and any physical restraint is now rather the exception than the rule, yet even fairly intelligent persons are heard to ask, when visiting an asylum, that they may be shown those who are, as they imagine, "chained" or caged up in their cells, and they sometimes seem incredulous when told there are no such. The difference between "Bethlehem," our Lord's birthplace, and "bedlam," the dwelling, or rather prison, of the "bedlamites," is no greater than that between the ideas of the masses and those which we, as specialists in the healing art, have learned to entertain.

Along with the most benevolent intentions, the masses, even of the medical profession, have but the faintest notion of what is required for the care of nervous or mental disease, and these latter for the very good reason that no adequate study or teaching of these maladies has obtained, or perhaps was possible until within recent years, and we have a work to do which is primarily educational, both for the public and for the masses, even of our own profession.

Taking now the matter of provision for the mental maladies as illustrating the process of development, it may be truly said, that it is only within 20 or 30 years that any conception has existed of the varying requirements of this class. Twenty years ago I published a paper in the *American Journal of Insanity* on "Differentiation in Institutions for the Insane," in which I urged that the epileptic, the criminal and the alcoholic cases required separate provision and removal from the general insane hospitals, so that the curable cases could be better cared for and the work better organized. At that time a single institution existed in our country for the criminal insane; there was none for the epileptic then, nor for many years after, and the cases of alcoholic and drug inebriety could only be cared for by being committed as insane to some public asylum (except the handful of such cases as could command private care), and when we consider, even to-day, how true it still is that these classes are unprovided for, we see how much there is still to be accomplished. Since then, and within very recent years, there has grown up a strong interest in and demand for special and separate care for the acute and curable insane, thanks to the efforts of enthusiasts for humanity and progress in the medico-psychologic and the neurologic associations of our own and other countries. Criminal asylums have been erected in many states, epileptic colonies and hospitals are rapidly springing up, a beginning has been made in the public care of the inebriate. The provision of convalescent homes for nervous and mental maladies has also been eloquently urged and brought to the attention of the profession and the public. Great improvements have been made in plan and construction of instiuttonsi by segregation in separate, suitable buildings admitting of better classifica-

tion. Detention hospitals have been provided in most of the larger cities where acute cases could receive prompt, suitable and often beneficial treatment, pending further disposition of their cases. But, however much is done, we see still more to do and the constant necessity of better adaptation of means to ends.

Now, considering separate provision for purely nervous diseases, we see, on looking over the ground, that anything of the kind has scarcely an existence, if we except the private sanitariums, hospitals and nervine homes that have been provided for the well-to-do, and one of the saddest pages in contemporary medical history is that which tells of the great number of patients who are poor or slenderly provided with this world's goods, for whom there is no care or treatment available; "who have not where to lay their head"; who can not recover at home and will not go to a public asylum or hospital, and cannot afford the expense of private care.

Taking these private institutions and examining into the forms of nervous and mental disease there represented, we see that the neuropathic and the psychopathic are commingled in all of them in a manner that goes to show one of two things—either the two classes belong together to a great extent or else their separate needs are largely ignored. The consideration of the neuroses as distinguished from psychoses shows that the former have largely a psychopathic element in them.

Take hysteria, one of the most frequent. We are at once confronted with the fact that this neurosis is also a psychosis. The mental functions are almost universally affected in hysteria, and, in fact, many writers classify hysteria among the mental diseases. Next, neurasthenia presents itself, and we need only ask ourselves as to the mental state found in neurasthenia to recognize that a large number of cases exhibit decided mental aberration—melancholia is a most common accompaniment of neurasthenia. "Nervous prostration" is often only a polite misnomer for insanity. Another large class of neurasthenics in whom the phobias and obsessions are found, forms really a group of cases of mild delusional insanity. So-called hypochondria is often a mild insanity. Harmless paranoiacs are generally classed among nervous invalids and not with the insane. If they are well-to-do they go to a private sanitarium; if indigent, to the public asylum. Chorea is very generally accompanied by mental changes, as has been recently pointed out by Moyer.

The large class of persons addicted to drugs and alcohol forms an important group, and here we have patients in whom very often, in the practical sense, insanity exists when the culmination of the drug or alcohol habit renders medical care and treatment necessary.

Take now the extensive class of organic diseases affecting the brain or spine, or periphery, in which we do not ordinarily say the patient is insane—hemiplegia, paraplegia, brain tumors, neuritis. It is indisputable that in a large majority of these the mind is disordered and functional or organic insanity exists.

The toxemias, which produce neuroses, syphilis, metallic poisoning, uremic poisoning, the neural complications of heart and kidney disease and arterial disease are accompanied by psychic complications almost invariably. Again, autotoxic diseases from deranged metabolism affecting the nervous system very generally affect the mind.

Finally, consider epilepsy. So far as its objective effects and symptoms are concerned they consist largely in insanity. Most of such individuals, whenever they are sick at all, are sick mentally, but are practically sane in the interval.

The treatment of very many of these neurotic cases needs to be the same as of the psychoses, and a hospital suitable for the one would be suitable for the other. On the other hand, it seems to me that if the attempt were made to create a purely neuropathic hospital and admit to it only those who were strictly mentally sound, the positions of the physicians and nurses would be sinecures. At the same time, if all who were admitted sought the benefits of the establishment because it was supposed that insane cases were not there received, it would be a growing enterprise and require to rapidly increase its capacity, so great is the prejudice aroused by the name "insanity," though the same condition under the name of "nervousness" would arouse no apprehension.

And here I may be pardoned for a few words as to the conception of insanity generally held. What is insanity? I do not ask this question with a view of adding to the numerous remarkable definitions already published. I simply inquire what the word insanity means to the general mind, both lay and professional, and I answer, that while you and I know that the hysteric, the neurasthenic, the hemiplegic, the toxic and many other cases are insane in the sense that they are mentally diseased and psychopathic, they are not insane in the sense in which the general public, or even the medical profession at large, understands insanity.

Insanity to these means a wild, hallucinatory state; it means noise, violence, suicide, homicide, destructiveness, untidiness—everything that is repellant, everything that is irrational. While at the same time it is a fact that a third of the population of any institution for the insane are persons quite free from these characteristics and who would be suitable inmates of any hospital or nervine home, so far as their appearance, conduct or demeanor go, on the other hand, the delirium of fever or toxis, the harmless fancies of hysteria, the states marked by obsessions and phobias, and the melancholia of the neurasthenic and the hypochondriac, and the emotional weakness of the hemiplegic, are not insanity to the average mind. Nevertheless, these are in their essence to the neuropathologist the same as "mania," "melancholia" and "dementia," and the various forms of universally recognized lunacy. We know that there are those among the insane who are far more rational than others, who are simply classed as "neurotic," and *vice versa*.

This word insanity I devoutly believe is a source of unending confusion and error, and it would be well if it could become obsolete like its predecessor, "lunacy." Insanity means something entirely different to different people who use it. It is unforunate in its etymology and in the fact that more than any other word in common use it is understood so diversely by diverse persons. Its derivation is the latin *sanus,* which means healthy. *Insanus,* or "insane," means etymologically nothing more than "unhealthy." Further, its technical meaning is absolutely different from its meaning in general acceptance.

When a mother, whose gentle daughter has hysterical paralysis, or one whose gifted son is a harmless paranoiac, or a wife whose hemiplegic husband, still brilliant but blurred and emotional, asks: "Is he (or she) insane?" I answer, "No," with the mental reservation, "not as you or the world understands insanity," or I say, "It is a mild psychosis." Fine susceptibilities are not wounded by the word "psychosis." Again, the most palpable case of insanity, one which would be admitted

as such by all the rest of the world, is not recognized as such by those nearest and dearest to the patient. The late Dr. Worcester, that keen observer, relates, in one of his observations, how a relative of a patient with most pronounced insanity, when the various convincing evidences were recounted, replied, "I know his mind is not right, but is he insane?" All this is a digression, but helps to illustrate the difficulty of separating the neuropathic and the psychopathic, and of reaching an agreement as to what insanity means and as to who is insane. And another illustration of the way in which insanity means one thing to the medical man and another to the world at large is found in the legal cases where insanity enters in as a question. The vagaries of courts and juries in criminal trials where the plea is insanity are only too familiar. The palpably insane are constantly punished as responsible and the sane criminal often escapes by means of the "insanity dodge." A recent striking illustration is given by Dr. Thayer, in his account of five palpably insane and irresponsible persons found guilty of murder in Maine in recent years and punished like fully responsible persons.

The repugnance to insanity grows in part out of the lingering prejudice surviving from the dark ages, when it was regarded as possession by the devil, and hence a disgrace to all concerned. It is also in other cases felt to be a disgrace because it is supposed to grow out of evil habits, or does, in reality, spring from such habits; but pneumonia, rheumatism, paralysis, Bright's disease, heart disease, which grow out of evil habits precisely as much, are not felt to be a disgrace. The fact of heredity in the general mind also increases the disgrace of insanity, and yet other diseases equally hereditary and equally disgraceful—that is, not at all—like arterio-sclerosis, consumption, gout, are not thought disgraceful and may even be pointed to with pride. Conditions precisely the same as those of insanity exist in other diseases, but are regarded in a wholly different manner. Fevers, surgical operations and the like, occur where the patient is as repulsive and as hard to care for as any insane case, and as disordered mentally, but these are looked upon only with commiseration and sympathy. Repulsive and helpless states growing out of delirium of fever, filthy and offensive conditions occurring in surgical or gynecologic states arouse no horror. The helpless victim of senile dementia need not be considered more repugnant than the swaddled infant, and yet is very differently regarded. Even violent and destructive acts growing out of crime, homicide or suicide, from unrequited affection or violent passion, are thought to be interesting and to have a certain sentimental attractiveness; while the same thing precisely supposed to spring from insanity is repellant to the last degree. This is largely due, as above stated, to the survival from earlier times of the feeling of disgrace attending insanity as a diabolical infliction or a punishment from heaven for exceptional guilt, when it is, in fact, only a disease like any other, differing solely in the fact that it invades brain tissue.

All of the above seems to me to be an argument for the disuse of the word "insanity," and for substituting the more accurate term "psychosis," as is generally done by continental writers, and I firmly believe we shall see a gradual but complete change in this respect.

Returning now to the question of neuropathic and psychopathic hospitals, I would say that as the matter presents itself to my mind, it is not by attempting to erect absolutely separate institutions and dividing, so to speak, the "sheep from the goats" (i. e., all the insane from all who are not so) that the best success may be attained. Such a division is in practice impossible. A hard and fast line cannot be drawn. Persons truly insane, as we understand the word, will always be euphemistically classed as "neuropathic" so long as the term "insanity" is in use, and others who are only neuropathic will be found among the insane as a result of chance, or choice, or necessity. In the public hospitals for insane, although the law erects a barrier and all who enter must be legally declared insane, we find the hysterical, the neurasthenic, the "habit" cases, the paralytic, the epileptic and scores of patients who are not so insane as the paranoiacs, melancholiacs, the paretics and the maniacs, who are numerous in our sanitariums and general hospitals.

There are certain exceptional cases of psychosis, or neurosis, which are harmful to others or for their own welfare, ought to be separated from association with fellow invalids—some temporarily, some permanently. They need special and segregated care, whether neuropathic or psychopathic. Such are all noisy, violent, destructive patients; also such as have an injurious moral influence; such as are repulsive in conduct or appearance. Some individuals of these classes are insane, some are primarily neuropathic and psychopathic at once, and one problem connected with their care is the fact that the objectionable conditions are often fleeting or paroxysmal and require changes of environment accordingly; so that their care is not suitably disposed of by simple incarceration, but requires changes in surroundings and treatment.

It has been taken for granted that association of nervous people with one another was necessarily injurious, and still more, that association with the insane would be disastrous. This is true if we take insanity in its popular meaning, but experience shows practically helpful and beneficial association daily going on, both in the wards of the insane hospital and the precincts of the neuropathic hospital or sanitarium. Even the administering of the rest cure has been claimed to require a private house other than the patient's home for best results, but that part of it carried on with the patient in room and bed would seem to be as well provided for in any well-arranged sanitarium or hospital as in a private house, and it is even possible, and in some cases certain, that the continuation of the treatment after the patient is up, may be more helpful for the associations and the social contact of other patients, provided these are suitably regulated. It is to be wished that more information were available on this point. A comparative study of cases of neurasthenia treated in institutions and in private houses would be valuable, particularly if embracing a long term of years and showing the subsequent history of each case.

As the matter presents itself to my mind, a public neuropathic or psychopathic hospital can be so arranged as to give suitable environment and association (or isolation where required) to the vast majority of both classes, without prejudice to either. I am now speaking only of public provision and discussing essentials and not the preferences or luxuries in which persons of abundant means can indulge.

The psychopathic hospital should be situated in the country, convenient to a good-sized city. In this view I differ from those who advocate a location in the city. Of course, rest treatment and care in bed are equally well in the city, but there is scarcely a psychopathic case able to be out of bed which will not be better for access to lawn and park and for the quiet of the coun-

try and for a place to go other than the city street. Of course, all details of sanitary location and construction are taken for granted. The territory should be ample, not less than an acre for each patient accommodated, so that agriculture could be carried on, and the grounds should be attractive. The capacity might vary from 50 to 150. There should be from four to eight buildings for classifying patients. It might be an independent institution or an annex to a larger hospital; the former being the preferable arrangement. One of the buildings should be so widely separated from the others and so arranged internally that the turbulent, noisy and destructive cases or stadia of insanity or delirium could there be cared for without disturbance or annoyance to those in other buildings. This latter building should be surrounded by trees and hedge-rows and have access to a thickly wooded grove. The internal arrangements should be such that patients who were temporarily noisy, violent and destructive would not annoy their neighbors. Where it were possible to have an additional building specially arranged for three to eight turbulent patients of each sex this would be an advantage. Even if these latter were not absolutely separated in another building, such patients could be well cared for without disturbing others, in specially constructed rooms with thick walls, lined with canvas padding, removable for renovation, with separate and specially arranged bathroom and plumbing and with double doors and windows opening on an inner court, and in which thorough ventilation could be secured by suitably located and protected electric fans.

It may be said that all of this turbulent, violent and noisy class should be in an absolutely separated institution, and such an arrangement would have its advantages. It would have, also, its disadvantage, that these violent conditions are often temporary, passing away in hours or days, and when they were over, a transfer would be necessary, and sometimes frequent transfers which would be much more difficult in case it were necessary to go back and forth to another and separate establishment. The epileptic, the periodic maniac, the alcoholic, the violent hysteric, and many nervous invalids not insane as ordinarily understood, would need such accommodation temporarily, hence I advocate the separate or turbulent ward as a part of the psychopathic hospital, knowing it is capable of being arranged so as to be no disadvantage to the other departments, and would be as useful for certain of the neuropathic as for the other class of cases.

I will not speak of the ordinary conveniences and well-known provisions required for nervous and mental cases, such as means of recreation and employment, means of hydrotherapeutic and electric treatment, a well-equipped laboratory, etc., or of a competent, adequate and skillfull medical and nursing staff. Each 25 patients of this class would well employ the energies of an enthusiastic and well-qualified physician, and to every five patients there should be, if possible, an average of one nurse. Some patients, of course, require one, or even two, constant nurses, others are able to do a good deal for themselves.

The other buildings comprising the psychopathic and neuropathic hospital need to be arranged only like any pleasant, comfortable dwelling. Twelve to thirty patients should be the limit in any one building. Some of the buildings should have only one sex; others both sexes in separate wings or floors. One building should be for those needing quiet and solitude. One for those who need sociability, music, games, etc. Congeniality and compatibility should be studied most sedulously, both of patients and nurses. I think one building with means of pleasant but complete isolation should be provided for those who constantly talk about and dwell upon their symptoms or vagaries or are mischievous and annoying to their fellow patients, thereby educating them in self-control and effecting a double benefit.

There is one important consideration in the organization of such an institution which relates to the question of commitment or manner of admission. If the psychopathic hospital, or "psychiatrium," were a public or a state institution, a large part of the neuropathic and most of the psychopathic might go voluntarily, as to any hospital, or in the same manner as to the public sanatoria for the tuberculous, or eye and ear diseases. Voluntary committment should be universally provided for, as is now done by statute in many states. In any case, where the patient's mental condition rendered action necessary irrespective of his will or perhaps in opposition to his wishes, or in cases where involuntary detention might become necessary in the patient's best interest during a state of delirium or irresponsibility, strict safeguards would be necessary to prevent any interference with personal liberty. A law establishing a psychopathic hospital might provide for "close" and "open" wards, and require a legal determination of the mental state, and an order of court for all persons received in the "close" ward or building, and, of course, all such institutions should be subject to visit and inspection systematically by the charity or insanity commissioners. A systematic inspection by sworn medical officers of the state who had expert knowledge of mental diseases might cover this ground. Of course, some difficulties would grow out of having persons, both psychopathic and mentally more or less normal, cared for in one establishment, but none which might not be met by well-considered provisions of the law. Heretofore all persons in the eye of the law regarded as insane have been supposed to be separated from other invalids, but the "eye of the law" has often been blind or affected with strabismus. Everyone familiar with the situation knows that taking institutions for so-called nervous troubles on one side and institutions for the insane on the other, there is in both a heterogeneous association of persons, both sane and insane, according to the point of view. The patients find themselves in one class or the other as a result of a thousand circumstances or chances; their financial circumstances, their own or their relative's willingness or unwillingness to have the official brand of insanity affixed, the emergencies arising from their condition, etc. In general, however, it may be said that of two persons exactly alike in condition, one well-to-do and the other poor, the former would escape a legal commitment and go to a private hospital or sanitarium, while the poor person would be subjected to judicial proceedings and placed in the asylum for the insane—a fact which, considering the superstition and prejudice existing in the public mind, would be a misfortune and a hindrance in the ordinary relations of life in a business and social way, and, although insanity by any other name is just as painful a circumstance, yet it would mean something less serious or detrimental to have gone to the "psychiatrium,' or even to have entered the "close" wards of such an establishment as is here in mind.

Regarding the nurses and attendants for the psychopathic hospital, it may be said that they should be trained or undergraduate nurses, and the standard of care should be such as the nearest and dearest friends

of the patient would approve of and give if they were by the patient's side, provided, however, that such nearest and dearest ones were possessed of the wisdom and the harmlessness the scripture tells us of. Here, however, is a source of difficulty. We know but too well that friends and members of the families of those who are nervous and insane are often not judicious and are themselves apt to be unwise and mistaken in their views as to what is best for the welfare of the patient. Out of this fact grows the ancient superstition that friends and members of the family should always be separated from the psychopathic and often from the neuropathic patient. This also accounts for the opinion of attendants and physicians often expressed that the visits of friends do harm. The visits occasionally may be harmful, but there is a strong prejudice also in the minds of attendants and physicians on this subject. If a patient, who is subject continually to violent paroxysms, is visited by a friend and a paroxysm occurs after the visit, it is apt to be attributed to the visit. Sometimes it would have occurred irrespective of visits of friends; again the friends and relatives, lacking all thorough or trained knowledge of what is needful, are apt to form erroneous opinions, and trouble and inconvenience, and sometimes harm to the patient, grows out of this fact. The only remedy, however, is greater freedom and a gradual process of education of the laity. Certainly exclusion and a repellant attitude toward friends leads only to doubt and suspicion and defeats its own object.

Regarding the expense of construction of such hospitals, it is to be recognized that they would be somewhat more elaborate and expensive than the average public institution for the insane, but probably no more so than the average general hospital. It would probably cost about $1,000 per capita to erect them suitably, exclusive of the ground required.

I will endeavor to summarize my remarks by the following statements:

1. It is evident that there is great need of special hospitals where the neuropathic and psychopathic can receive treatment with the aid of all the advancement and skill of the present time. The neuropathic are, to a great extent, also psychopathic, but not insane as the word is ordinarily understood, although technically there is no difference between the psychoses of the neuropathic and what is medically termed "insanity," the difference being one of degree rather than of kind.

2. It is difficult or impossible in practice to place all the neuropathic in one group or location and all the psychopathic in another. They are inextricably commingled, the same persons frequently passing from one class to the other or belonging in both at once. The delirious, the maniacal, the epileptic, the frenzied, the auto- or hetero-intoxicated person of to-day is the quiet, rational, sane person of to-morrow, and many of the neuropathic are affected with psychoses.

3. If the turbulent, maniacal and otherwise objectionable patients are provided for in a wholly separate department, it is possible, where two separate institutions can not be afforded or maintained, to provide suitably for both neuro- and psycho-pathic on the same premises in detached buildings arranged for suitable classification. Constructive and administrative arrangements that are perfectly feasible would enable objectionable patients to be so located and so changed from time to time that appropriate surroundings will be provided for all.

4. The hospitals required may be either additions to existing institutions or separate establishments. The circumstances must differ in every community, and great flexibility will be necessary in the various arrangements according to members of different classes, location, means available, etc.

5. The word "insanity" has outlived its usefulness; it has no power as a definition in a technical sense, either medically or legally, and its popular use is confused and unsatisfactory. Etymologically the word is an absurdity. No acceptable definition of insanity has ever been formulated. "Psychosis" is a preferable term.

6. The legal questions relating to commitment to these hospitals would need legislative adjustment. Admission could be largely voluntary as to any hospital. Voluntary commitment as provided for legally now in many states of the Union would remove the difficulty in a large number of cases. It is understood no one should be under involuntary confinement without legal warrant, and suitable safeguards should be provided.

Original Articles.

ABSCESS OF THE LUNG FOLLOWING ACUTE LOBAR PNEUMONIA.*

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A decided impetus was given to the surgery of the lung in America by the paper of Bull in 1882 and the Address on Surgery by Murphy[1] of Chicago. This has been especially true of the surgical treatment of pulmonary abscess following pneumonia. When I selected this subject for my paper I was not aware that Eisendrath of Chicago was collecting statistics and working along the same lines. When, however, I began looking up the literature on the subject I found his most classical review[2] of "The Surgery of Pulmonary Abscess, Gangrene and Bronchiectases Following Pneumonia." The subject has been so carefully canvassed by him and the ground so thoroughly covered that I have been unable to find a single case of abscess of the lung not reported by him. I have therefore made free use of the material which he has collected and put in such excellent shape. In preparing the tables which follow this paper I have used his tables, simply eliminating the cases of gangrene, bronchiectases, probable tubercular abscess and abscesses following septic and traumatic pneumonia. I wish here to publicly acknowledge my indebtedness to Dr. Eisendrath and express my hearty appreciation of his painstaking, valuable work.

After eliminating the cases which I consider do not properly belong under the title of this paper, I find that he has collected in all 73 cases of "acute," "simple chronic" and "chronic putrid" pulmonary abscess, which, with my two cases, reported further on, make a total of 75.

The diagnosis of pulmonary abscess where the cavity is not surrounded by normal lung tissue should not be difficult. The history of an antecedent pneumonia with subsidence of the acute symptoms, followed by septic temperature with sudden expectoration of quantities of pus, then defervescence; more or less continuous purulent expectoration with exacerbations when the escape of pus is temporarily arrested, should lead one to strongly suspect this condition. The most valuable physical signs

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

1. THE JOURNAL A. M. A., 1898.
2. Philadelphia Medical Journal, Nov. 9, 16 and 23, 1901.

are dulness on percussion, large mucous râles and a metallic element in the sounds on auscultation and deep percussion. Bacteriologic examinations of the expectoration, revealing the pneumococcus and the pus-producing organisms with absence of the tubercle bacilli, in conjunction with the history and physical signs, make the diagnosis conclusive.

The prognosis in cases of pulmonary abscess, that have persisted without marked improvement for more than four weeks, is so unfavorable under medical treatment that surgical intervention should be advised, when warranted by the patient's general condition. Cases not surgically treated grow more or less progressively worse until exhaustion or some intercurrent disease gives a happy release from suffering. The results of surgical treatment are most gratifying and growing progressively better as the operations are done earlier, more carefully and thoroughly.

My first case illustrates beautifully the immediate and continuous relief that may be obtained and the absolute restoration to health. My second case was a striking illustration of what the human organism can endure without great impairment of the vital organs and still retain its capacity to return to the normal when relieved of its burden. My experience in these two cases leads me to advocate opening the abscesses as low as possible, and in old cases much more extensive removal of ribs and diseased tissue. I should have done this in my second case except for the patient's miserable condition. He seemed almost moribund before completely under the anesthetic, and almost collapsed before I had completed even the simple operation of resection of short portions of two ribs. I believe this patient will also soon be restored to good health and the small existing sinus obliterated.

Later: Sinus closed; cure complete.

The following remarks on the pathology of pulmonary abscess, the physical signs prior to operation and the present condition of my two patients are by Dr. H. F. Harris, professor of pathology, Atlanta College of Physicians and Surgeons:

Abscess of the lung occasionally follows pneumonia, but it can not be said that it is a frequent sequel of this affection. It may result from either the common lobar pneumonia, or from the bronchial variety of the disease. As to the exact frequency with which this complication occurs there exists, so far as I am aware, no definite statistics, but that it is more frequent than is generally supposed there can be little question. This results from the fact that pneumonia may directly terminate in abscess, or this condition may come on some weeks after the individual has recovered from the acute pulmonary disease. When the latter occurs, there can be no doubt that our hospital statistics frequently fail to give a just idea as to the frequency of the complication, as under such circumstances the patient must frequently have been dismissed from the hospital before symptoms of breaking down of the lung were apparent, and doubtless many such instances have subsequently been regarded as tuberculosis following pneumonia.

As to the precise nature of the changes that occur in the lung when abscess begins to form as a sequel of pneumonia, we are in more or less ignorance; since, so far as I know, no one has made accurate histologic examinations at the time when the disease first developed. It is furthermore true that the exact conditions necessary to bring about this result are not as yet understood. It is assumed by some that this complication results from the presence of the pyogenic cocci, these acting together with the organisms that produce the pneumonic process. It, however, can hardly be doubted that the *micrococcus lanceolatus* is itself capable of bringing about a result of this kind under favorable conditions, and instances have been recorded where this bacterium was found in pure culture of the pus from abscess following pneumonia. Although, as before stated, the precise character of the histologic changes that occur in beginning abscess are not fully known, it is extremely probable that the tissues undergo alterations practically similar to those occurring in other parts of the body where abscess formation takes place. The pulmonary structures soften, undergo liquefaction and accumulate vast numbers of polymorphic nuclear leucocytes. These changes progress until an external opening is effected—this, in the vast majority of instances, being brought about by ulceration into a large bronchus and the expectoration of the abscess contents. After this occurs, it is probable that the size of the abscess does not further greatly increase, for if the patient does not quickly die, the cavity becomes walled off by newly-formed fibrous tissue in which, in old cases, lime salts may be deposited. Under such circumstances, the physical signs leave no doubt that the surrounding lung substance is never normal, but that a condition somewhat resembling broncho-pneumonia is constantly present. Although this state of affairs may continue even for years, the cases herewith recorded show beyond question that the lung may return to its normal condition after the abscess has been cured.

DR. HARRIS' COMMENTS ON THE TWO CASES.

CASE 1.—P. R.—I examined this patient a short time before he was operated on and found, briefly, the following conditions; Patient is emaciated and pale. On inspection of chest the right shoulder is found to be considerably lower than the left, and neither on ordinary nor forced inspiration does the right chest expand to the same extent that is observed on the left side. On physical examination the upper and middle lobes of the right lung present no abnormalities, but extending from the third rib, where it joins the spinal column, downward and forward to the base of the lung in the right axillary line, there is dulness on percussion. On auscultation bronchial breathing is quite generally found along with a great number of small and large moist râles. Just beneath the lower angle of the scapula an area about two inches in diameter is found, in which on deep percussion a certain degree of resonance is elicited—the note produced having a distinctly metallic character. The "cracked pot" sound could not be elicited. On auscultation over this area the voice and the sounds produced in breathing are of a distinctly metallic character.

On May 26, seven months after the operation, this patient was again examined. Right shoulder is not perceptibly lower than the left and the chest expansion during inspiration almost normal. Percussion over the diseased area shows that there remains only a very slight degree of dulness, this evidently being the result of the thickened pleura. On auscultation, much to my astonishment, the vesicular murmur, even over the site of the wound, is absolutely normal and no râles are present.

CASE 2.—Wm. W. R. —When first seen this man was greatly emaciated, very weak, and evidently extremely anemic. On inspecting the chest the left shoulder is found to be lower than the right and the left side of the thorax does not expand during breathing to anything like the same extent observed on the opposite side. On examination the upper lobe of the left lung is found to be normal, with the possible exception of its lower anterior border which may be involved in the diseased process that is present in the entire lower lobe. This, however, could not be made out with certainty on account of the great difficulties of making exact determinations in this particular locality. The lower lobe of the lung, beginning at a point where the 3d rib joins the spinal column and extending downward and outward to the lower border of the heart, presents dulness on percussion of a pronounced kind, and on auscultation bronchial breathing is everywhere heard, along with numerous moist râles. Outside the lower angle of the scapula and extending toward the spinal column, there is an area about four inches in diameter over which a distinctly metallic, tympanitic sound is produced on deep percussion. This, however, is not perceptible when the finger is tapped only lightly, there being

under such circumstances merely dulness. The "cracked pot" sound could be elicited in a most striking manner. On auscultation the voice and the sounds produced in breathing are here found to be metallic in character, and it is noted that the pitch of the sounds produced in inspiration and expiration preserve their normal relationship, i. e., the expiration is of lower pitch than the inspiration.

This patient was again examined on May 25, about three months after the operation. The left shoulder is not quite on a level with the right, but does not drag downward to anything like the same extent observed before the operation. The chest expansion of the left side is not yet normal, but there is a decided improvement over the condition previously observed. On percussion it is found that posteriorly the lung is fairly resonant down to the lower border of the fifth rib and passing forward flatness is elicited from one to two inches lower than before the operation. In this area there are still numerous moist râles, but bronchial breathing is no longer present. Lower down, surrounding the wound in the chest, the lung is still flat on percussion and the breathing is bronchial. In this situation there has been no perceptible improvement, though this could scarcely be expected when the long duration of the affection is considered. It is astonishing that any improvement, even in the upper portion of this lobe, could have resulted under such circumstances, but that this has actually occurred there can be no doubt.

In both instances, repeated examination failed to reveal the presence of tubercle bacilli. There were, however, enormous numbers of the *Micrococcus lanceolatus*, and many of the ordinary cocci of suppuration.

AUTHOR'S NARRATION OF THE CASES.

CASE 1.—P. R., male, 19 years old, single, American, insurance clerk. Had acute lobar pneumonia, right lung, March 29, 1900, followed by pleurisy. Confined to bed to May 12. After being up for three months began expectorating pus. About every twenty-five to thirty days would have intense pain lower portion of right side, expectorating quantities of purulent material with fetid odor, and be relieved. Pus would continue, in gradually diminishing quantities, twelve to fourteen days. Jolting, as horseback riding, etc., would cause pain and increase the discharge of pus. He became stooped antero-laterally, with considerable depression of right shoulder. I first saw patient during fall of 1900, and after physical examination of the chest and repeated bacteriologic examinations without finding tubercle bacilli, I advised operation, which was declined. The patient was in such poor physical condition that the family physician was unwilling to have the operation done. Patient spent the following spring and summer in the mountains of North Carolina without real improvement. In September, bacteriologic examination of expectoration for tubercle bacilli still negative. Operation consented to. Admitted to St. Joseph's Infirmary Oct. 18, 1901. Temperature ranging 98 to 100, pulse 80 to 100, expectorating large quantities of offensive pus. Continuous pain in right subscapular region over which area there was marked dulness, Mitral and aortic murmurs (hemic).

Operation.—October 22. Gas-ether anesthesia. Patient in antero-lateral decubitus. Incision along fifth rib anterior to posterior axillary line. Two inches of rib removed. Pleura greatly thickened, pus found upon aspiration. A vertical incision was made from the center of the first incision downward and an inch and a half of the sixth rib removed. Pleuro-costalis, pleuro-pulmonalis adherent and the latter continuous with thickened, indurated lung tissue and abscess wall. A circular excision of these structures a little larger than a silver dollar, opened well the abscess cavity, allowing the escape of two to four ounces of pus. This time considerable blood and pus coughed up, escaping through mouth and nose. Abscess cavity, about 3 inches in diameter, carefully wiped out with gauze, two drainage tubes with gauze (iodoform) placed in, and angle of wounds closed. Afternoon temperature 99, pulse 96, thence temperature, normal. Outer dressing changed October 23. Very little soiling. On second day drainage tubes and gauze packing easily removed. Moist, but not saturated with pus. Cavity clean and bright red. One tube replaced, cavity lightly packed with gauze. No cough, expectoration or pain after operation. Lung expanded rapidly; depression of right shoulder disappeared and cavity rapidly filling with granulations. Was gently wiped out every second or third day with iodoform gauze and drainage tube kept just within cavity until the 27th day, when only a sinus one-quarter inch by two inches remained. On the 40th day had clear respiratory murmur over the lung. Wound completely healed. Walks erect. Had gained 30 pounds and had been working as rodman in surveying corps for a week.

CASE 2.—Wm. R. H., aged 59, married, laborer in saw mill. Health good until March 18, 1896, when he had acute lobar pneumonia, lower lobe of left lung, for about 10 days. Then severe symptoms subsided, but he began coughing, violent paroxysms, expectorating large "clumps" of pus. From March to August, of same year, he lost 50 pounds in weight. The expectoration of offensive pus continued from subsidence of pneumonia, always being increased after walking or talking for any length of time. After sleeping for 4 or 5 hours at night, in never lower than a semi-prone position, would, on awakening, expectorate great quantities of pus, which would almost run in a stream from his mouth. When walking around, the expectoration was so profuse that "he could be tracked by the clumps of pus." He could lie for only a few minutes on the right side, with left arm raised. Left lateral position or pressure of arm upon chest, causing pain and coughing. Pain almost constant over region of apex of heart. He had no night sweats or fever. Appetite poor. Admitted to Grady Hospital Feb. 28, 1902. Temperature 98, pulse 96. Complained of pain lower portion of chest, greatest intensity over apex of heart. Almost constant cough, expectorating large quantities of offensive pus. Could sleep only in sitting posture.

Operation.—March 3. Chloroform anesthesia. Incision 3 inches long, just beneath and slightly to axillary side of angle of scapula. Two inches of fifth and sixth ribs removed. Pleuro-costalis, pleuro-pneumonalis thickened, adherent and the latter continuous with the lining membrane of the abscess cavity. Pus found on aspiration. As abscess opened, 8 to 12 ounces of pus escaped. Several pieces of calcareous material of bony hardness were removed from the abscess cavity and torn loose from the lining membrane. A considerable area of thickened pleura was removed and the whole cavity scraped with a sharp curette. Cavity irrigated gently with normal salt solution; two large drainage tubes inserted and the whole cavity lightly packed with iodoform gauze. Coughing immediately relieved. On the fourth day tubes and packing removed and cavity irrigated with normal salt solution, tubes and packing replaced. After irrigation, patient could taste the salt solution and later the iodoform. Tubes and gauze removed and left out on the seventh day. Cavity irrigated daily. Considerable purulent discharge. Two days after drainage tubes were removed, again began having paroxysms of coughing, expectorating pus. Tubes replaced, cough stopped at once. After a slight exacerbation, soon after operation, temperature continued normal and pulse gradually improved. Appetite good, and when patient left the hospital April 23 he had gained 45 pounds. A small sinus from which a slight quantity of serous fluid escapes, still persists.

Later: Latter part of July sinus closed; cure complete.

SYNOPSIS OF TABLES FOLLOWING.

Cases.	Average Age.	Male.	Female.	Average Time, Pneumonia to Operation.	Adhesions. Per cent	No Adhesions. Per cent.	Recovered. Per cent.	Improv Per cent	Died. Per cent	Total cases.
Acute	29 4 years. (4 to 60)	27	13	31 3 days.	34 85.	6 15.	33 82.5	2 5.	5 12 5	40
Simple chronic	34.1 years. (19 to 60)	8	4	1 year.	9 75.	3 25.	6 50.	2 16.7	4 33 3	12
Chronic putrid	27.2 years. (19 to 60)	15	8	2 1 6 years.	18 78 2	5 21 8	12 52.1	4 17.4	7 30.5	23
Total.	30.2 years.	50	25	13 months.	61 81 3	14 18.7	51 68.	8 10 7	16 21 3	75

THE SURGERY OF PULMONARY ABSCESS AND GANGRENE FOLLOWING PNEUMONIA. TABLE 1.—SIMPLE ACUTE ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.
Körte.	Male, 37.	Pneumonia, left lower lobe, 3 weeks previously.	Dulness from angle of scapula down, with weak bronchial breathing and many râles.	Yes.	Pneumotomy; found cavity in left lower lobe, admitting two fingers. Second operation one month later to relieve accompanying empyema.	Recovery after 8 weeks.
Körte.	Male, 36.	Influenza, pneumonia 2 weeks previously.	Dulness posteriorly from angle of scapula downward, left side.	Yes.	First operation opened an empyema. Second operation performed 4 weeks later on account of pain to left of precordium. Abscess in left upper lobe opened.	Recovery in 8 weeks.
Körte.		Pneumonia 4 days previously.	Extensive dulness anteriorly to third rib, posteriorly to spine of scapula.	Yes.	Thoracotomy; circumscribed empyema opened. Dulness continued. Fever and sputum like that of an abscess. Second operation; opened encapsulated abscess of lung.	Recovery in 3 months.
Edward Martin, Philadelphia, unpublished.	9 years.	Pneumonia.	Faint dulness left of cardiac dulness and merging into it.	Yes.	Pneumotomy; half ounce of pus evacuated.	Recovery.
R. Matas, unpublished.	Male, 22.	Pneumonia.	Well-defined area of dulness over base of right lung, bronchial breathing; hectic fever.	Yes.	Resected 8th rib and evacuated nearly a pint of pus; no odor; cavity had rigid, rough wall; iodoform gauze packing.	Recovery.
W. J. and C. H. Mayo, Rochester, Minn., St. Mary's Hospital Report, 1901.	Female, 10.	Grippe, pneumonia 4 weeks previously.	Physical signs; located abscess in left lung; *x*-ray not of material aid.	Yes.	First operation failed to find abscess. Second operation two weeks later; opened abscess in front of previous opening.	Recovery.
H. Jablokow, Archiv. f. Kinderheilkunde, vol. 31, p. 278.	Male, 10.	Grippe, pneumonia 5 weeks previously of right lower lobe.	Dulness from third rib in front from angle of scapula behind and spreading axillary regions. Decreased respiratory murmur and fremitus and moist râles. A tumor appeared 4 by 6 c.m. over the 4th to 6th ribs. On coughing frothy muco-pus came from wound.	Yes.	Evacuated four ounces of bloody pus from tumor. From incision could palpate cavity in lung (size of an egg).	Fever, etc., fell rapidly; fistula still present.
Green, Lancet, Jan. 24, 1901, p. 196.	Female, 6.	Pneumonia of entire left lung 4 weeks before.	Bulging and tenderness over 5th rib (ax. line). Large quantity pur. expectoration, dulness, tubular breathing & dec. fremitus.	Yes.	Opened abscess in lung with trocar as guide. Drained.	Recovered in a few weeks.
Mass. General Hospital.	Female, 36 mos.	Pneumonia 3 weeks.	One week after fluid was found in chest. About half cup of creamy fluid drawn off. Since then considerable pain in right side. Cough with white, frothy expectoration. Shortness of breath. A distinct bulging in axillary region of the side.	None.	Ether given. A portion of 5th rib removed. Opening made in right lung. Considerable hemorrhage and one and one-half pints pus evacuated. Patient also coughed up considerable pus and blood.	Recovery in 3 weeks.
Runeberg, Deut. Archiv. f. Klin. Med., vol. 41, 1887.	Male, 33.	Pneumonia 4 weeks before; no crisis; physical signs cleared up, but fever again began (remittent type).	Dulness from mid-axillary line to spine or scapula.	Yes.	Exploratory puncture in 6th intercostal space showed pus. Resected 6th rib. Entered cavity in lung with soft wall and evacuated pus. Drained. Temperature fell at once.	Recovered in 4 months.
Huber, Trans. Am. Ped. Assn., vol. 3, 1892.	Male, 4.	Pleuro-pneumonia one month before.	High temperature and respiration rapid. Bronchial breathing.	Yes.	Exploratory puncture showed pus. Drained.	Recovered 8 months later.
Quincke, Berlin Klin. Woch., 1888, No. 18.	Male, 23.	Left lower lobe, pneumonia 3 months before.	Dulness behind as high as fifth dorsal spine. Vocal fremitus absent and respiratory murmur decreased. Very fetid expectoration; marked fever.	None.	After application of zinc chlorid resected rib. No cavity found.	Recovered 2 months later.
Rochester Med. News, Jan. 20, 1894.	Male, 38.	Pneumonia of right middle and lower lobes 3 weeks before first operation.	Elastic fibers found in sputum. Tympany in inter- and infrascapular regions with amphoric breathing and voice. Dulness below it.	Yes.	Resected 5th rib and drained. No relief, followed by pyemic symptoms. Three months later more extensive resection; cavity packed.	Recovered in 3 months after 2d operation.
Sewerin, Botkin's Hosp. Zeitung, 1896, No. 14.	Female, 22.	Soon after an attack of croupous pneumonia, sign of a cavity.	Signs of cavity in axillary region.	Probably.	Incised and evacuated 350 c.c. pus with necrotic lung masses.	Recovered.

...cet, Dec. 18, 1897.		...sign of a cavity.	...ferly and behind coarse gurgling râles under right scapular and bronchial breathing.	...encapsulated serous exudate.	...ture showed pus. Resected rib and found irregular cavity of large size.		
Elsner, Medical News, March 25, 1899.	Male, 34.	Severe pneumonia 11 days before.	On 11th day symptoms of pus accumulation in middle lobe of right lung. Localization very difficult.	Yes.	Lung incised and drained. Incision followed by considerable hemorrhage. Found pneumococci and staphylococci.	Recovered.	
Elsner, Medical News, March 25, 1899.	Male, 26.	Pneumonia middle and lower lobes of right lung with delirium tremens just preceding operation.	Crisis followed by intense pain below scapula and in axilla and fever. Dulness and amphoric breathing.	Few adhesions.	Exploratory puncture showed pus. Resected rib and opened an abscess in lung just beneath pleura, containing half a pint of pus. Local anesthesia.	Recovery 2½ months after operation.	
Crerar, British Medical Jour., May 20, 1899.	Male, 9.	Right-sided pneumonia just before (4 weeks).	Four weeks after crisis had harassing cough, but no sputum. Marked emaciation, temperature, dull area toward axilla and from fifth dorsal spine down. Vocal resonance lost. Diagnosis of empyema made.	Yes, at upper part.	Could not find abscess at first, until several ribs resected. Opened cavity size of small orange in lung with soft ragged walls Gauze packing.	Healed in 2 months after operation.	

TABLE II.—ACUTE GANGRENOUS ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
Körte.	41.	Pneumonia 1 month previously.	Marked dulness over lower and lateral aspects of left lung. Putrid sputum and odor.	Yes.	Circumscribed empyema opened, communicating with abscess in lung. Iodoform gauze drained.	Recovered in 7 weeks.	
Körte.	Male, 56.	Pneumonia 4 weeks before.	Dulness over right lower lobe laterally. Decreased respiratory murmur and fremitus. Puncture in 6th interspace showed thick putrid pus.	Yes.	Pneumotomy; large irregular cavity in right lower lobe opened.	Recovered in 6 weeks.	
Edward Martin (Philadelphia).	Male, 14.	Pneumonia.	Profuse and offensive expectoration,, following subsidence of physical signs. Dulness over area size of hand at base of right lung, with large bubbling râles.	Yes.	Circumscribed empyema found under 9th rib, which was resected. Opening into pulmonary cavity found, and enlarged, and drained.	Complete but slow recovery.	
Edward Martin (Philadelphia). Unpublished case.	Child, age and sex not given.	Pneumonia followed by symptoms of profound septic poisoning and fetid expectoration.	All pointed to abscess cavity in right lower lobe.	Yes.	Two ribs resected and whole right lower lobe found in a condition of acute gangrene.	Death in 24 hours.	
Jas. H. Dunn (Minneapolis). Unpublished case.	Female, 35.	Pneumonia, left lower lobe 2 weeks before.	Chilled, expectoration of fetid pus. Sign of cavity.	Yes.	Resection of 6th and 7th ribs in posterior axillary line. Exploring needle showed pus. Cavity opened and drained.	Recovered in 9 weeks.	
Chas. A. Morton, British Medical Journal, Feb. 17, 1900.	.....	Acute pneumonia 4 days previously.	Dulness from angle of scapula down. Tubular breathing.	None. Held up lung with forceps.	Sutured pleura and evacuated pus. No infection of pleura resulted.	Recovered in 4 months.	
W. J. and C. H. Mayo, St. Mary's Hospital Report, 1901.	Female, 42.	Pneumonia 3 months before.	Physical signs and *x*-ray not of marked aid in localizing cavity.	None.	Suture of visceral to parietal pleura. Second operation 5 days later, abscess drained; gangrene of lung.	Recovered.	
Quincke, Mittheilungen aus den Grenzgebieten, 1896; also Berl. Klin. Woch., 1888, No. 18.	Male, 32.	Atypical pleuro-pneumonia 10 weeks before.	Those of abscess in right lower lobe. Fever and putrid sputum.	None.	Zn Cl_2 paste used to produce adhesion. 12 days later pneumotomy.	Recovered in 4 months.	
Quincke, Mittheilungen aus den Grenzgebieten, 1896.	Male, 33.	Pneumonia 2½ years before. Fresh pneumonia probably cause of abscess.	Putrid sputum, containing elastic fibers. Behind on right side from 6th dorsal spine down dulness, bronchial breathing and metallic râles.	Yes, shown by lack of respiratory mobility and inspiratory retraction.	Exploratory puncture in 7th space showed pus. 8th, 9th and 10th ribs resected in scapular line. 3 days later gangrenous cavity opened and drained.	Recovered in 6 weeks.	
L. C. Smith, Lancet, July 20, 1889.	Female, 39.	Atypical pneumonia 9 weeks before.	Cavity symptoms at angle of right scapula. Putrid sputum.	Yes.	Exploratory puncture below angle of scapula negative. Pneumotomy with blunt dilatation of small cavities.	Improved, putrid odor disappeared.	
H. Jablokow, Archiv. f. Kindelheilkunde, Vol. 31, p. 278.	Male, 10.	Probable pneumonia 3 weeks before.	Extensive dulness over right lower lobe, with fine moist râles, and bronchial breathing. High fever, rapid breathing and marked fetid breath.	Yes.	Resected 7th rib in axillary line; entered cavity filled with putrid fluid and fine lung detritus. Removed a 5 cm. piece of gangraneous (sequestrum) lung. Greatly improved, yet fever and expectoration continued. Opened 3 cavities one month later by resecting rest of 7th rib.	Died 5 months later, of inanition, though general condition greatly improved.	Extensive adhesions of right lung. Around wound of operation many pus cavities filled with gangrenous particles, and communicating with several bronchi.

TABLE II, CONTINUED.—ACUTE GANGRENOUS ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
H. B. Meakin, British Medical Journal, 1896, Vol. 11, p. 747.	Male, 31, insane.	Pneumonia, base of right lung, May 20, 1896.	Three days after beginning of disease, area of dulness increased and noticed fetid breath. Dulness to clavicle and to left of sternum. No expectoration. High fever.	None.	Schleich anesthesia. Exploratory puncture, obtained one ounce of fetid, thick fluid. 6th and 7th ribs resected. On opening pleura, large quantity of fetid fluid escaped. No collapse of lung. Opened gangrenous cavity of lung, and drained.	Recovered.	
Openchowski, Zeit. f. Klin. Med., Band 16, 1896.	Male, 30.	Pneumonia 3 weeks before, followed by a sudden expectoration of large amount of fetid pus. (150-350 cm.) daily.	Decreased resonance over right upper lobe in front, from 3d rib down. Dulness further down with bronchial breathing and middle-sized moist râles. Later tympany, amphoric respiration and metallic râles in axilla.	Yes.	Resected 5th and 6th right ribs. Opened lung with cautery and entered cavity communicating with bronchus.	Recovered in 8 months.	
S. C. Smith, Lancet, 1880. Jan. 17, p. 86.	Male, 60.	Pneumonia, right lung, 14 days before.	Sudden fetid expectoration on 13th day after beginning of pneumonia. Tubular respiration around spine of scapula and below nipple. Diagnosed cavity of middle lobe.	Yes.	Opened cavity by incising between ribs and inserting tube. But little relief from toxic condition.	Died 4 days later.	
Hofmokl, Wiener Med. Presse, Vol. 32, Nov. 27, 1892.	Male, 32.	Pneumonia some years before, fresh attack previous (14 days) to operation, followed by gangrenous sputum.	On right side, behind, dulness, and large moist râles.	Yes.	Resected 7th rib at angle of scapula. Pleura looked gray and lung felt firm. Made 3 negative exploratory punctures. The 4th puncture 2½ inches into lung and showed small amount of putrid pus.	Recovered in 3 months.	
Edv. Bull, Nordiskt Med. Arkiv, Vol. 13, No. 17.	Female, 23.	Two months before had an acute bronchitis, later became putrid, followed by pneumonia of left upper lobe.	Signs of cavity. Exploratory puncture showed putrid pus causing infection of soft parts along line of puncture.	Yes.	Incision in 4th intercostal space. Drained.	Recovered in a short time.	
Moir. Lancet, Jan. 9, 1897.	Male, 23.	Left-sided acute pneumonia 4 weeks before. Symptoms of gangrene.	Septic symptoms. Physical signs best marked in axillary region and below spine of scapula.	Yes.	Incision over axillary region; evacuated portions of gangrenous lung from large cavity in latter. Inserted tube.	Recovered 5 weeks after operation wound was healed.	
Jayle & Jaffray, Soc. Anatomique, 1893.	Male, 41.	Pneumonia of righ lung 4 weeks before.	Dulness and absence of respiratory sound over base of right lung. Sudden expectoration of large amount fetid pus. High fever.	Yes.	Local anesthesia. Incision in 8th intercostal space, and evacuation of large amount of fetid pus.	Died one week after operation.	Found cavity occupying greater part of right lower lobe, into which several bronchi opened.
Hans Kohn, Deut. Med. Woch., 1898, 313, Vereins Beilage.	Male, 48.	Right upper lobe influenza. Pneumonia just before onset of gangrene symptoms.	Indistinct sign of a cavity in right lower lobe. X-Ray showed shadow size of palm of hand over lower lobe.	Yes.	Resected 8th, 9th and 10th ribs, but a tear in adhesions gave rise to pneumothorax; discontinued operation. After resorption of pneumothorax (2 weeks) made exploratory puncture, followed by severe hemorrhage from mouth.	Died immediately after puncture. Suffocation caused death, in spite of tracheotomy.	Found a cavity occupying lower lobe. Hemorrhage had not come from this cavity.
Phillips & Nash, Lancet, Nov. 21, 1896.	Male, 36.	Pneumonia 4 weeks before, followed by septic symptoms and fetid breath.	Dulness over 5th rib in right axillary line, decreased respiratory sound, vocal resonance and fremitus.	Yes.	Exploring needle drew fetid pus from the 6th intercostal space. Resected 1½ inches of 6th rib and opened gangrenous cavity in right lower lobe.	Healed one year after operation.	
Tuffier, Bull. de la Soc. de Chir., 1895, p. 765.	Male, 60.	Pneumonia 6 weeks before, followed by persistent hemoptysis, and odorless sputum.	Decreased resonance behind about angle of scapula, loss of fremitus, bronchial breathing and subcrepitant râles.	Yes.	Resected 7th rib and opened cavity size of head of fetus in lower lobe, from which brownlish malodorous pus escaped. Gauze packing. Severe hemoptysis 6 days after operation.	Recovered.	
Ramsay, Annals of Surgery, 1890.	Male, 32	Pneumonia a few weeks before. Soon after crisis gangrene began.	Lower one-third right lung dull. Respiratory murmur absent. Exploratory puncture showed greenish pus.	Yes.	Resected 3d rib in axillary line. Opened cavity 2 cm. long, containing cupful of gangrenous-looking fluid. Drained.	Recovered in 6 weeks.	

TABLE III.—SIMPLE CHRONIC ABSCESS.

Author.	Age. and Sex	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
Körte, Archiv. fur Klin. Chir. Vol. 63.	Male, 52.	Pneumonia 2 years before.	Dulness and small moist râles over middle lobe. X-ray showed distinct cavity, middle of right lung.	None.	Catgut suture of pleura. Marked dyspnea during operation. Only once small quantity of pus obtained.	Died 3 hours after operation.	Showed a system of bronchiectatic small cavities, surrounded by pneumonic areas. Only the smallest cavity had been opened.
Körte, same.	Male, 21.	Pneumonia 6 months before.	Dulness, tympany, and amphoric breathing, with large moist râles over right upper lobe.	Yes.	Pneumotomy. Pus evacuated from bronchiectatic abscess found in right upper lobe.	Recovered in 18 weeks.	
Körte, same.	Female.	Influenza-pneumonia 2 years before.	Over left lower lobe marked dulness, bronchial breathing. Resonance decreased and dry râles over rest of lung. Later amphoric breathing over left lower lobe before operation.	Yes.	Bronchiectatic pus cavity opened. Later a communication with a second cavity established.	Died three months later.	Stenosis of main bronchus. Extensive cavity in left lung.
Körte, same.	Female, 41.	Influenza-pneumonia of right lower lobe one year before.	Posteriorly on right side, dulness increased from above down over upper portion; bronchial breathing from angle of scapula down; light amphoric breathing.	Yes.	Small, circumscribed empyema opened. Also opened abscess in right lower lobe.	Died 7 days after operation, of fresh pneumonia of R. U. L.	Showed that operation had opened walnut-sized cavity in right lower lobe, but there were smaller ones present not opened.
Carl Beck, New York, N. Y. Med. J., Aug. 28, 1897.	Male, 31.	Pleuro-pneumonia one year previously.	On right side in front; tympany and râles and bronchial breathing.	None.	Resected 8-10th rib. One ounce pus evacuated. Some odor.	Healed 2 months after operation.	
Karewski. Arch. f. Klin. Chir., Vol. 67, p. 555.	Female, 35.	Left pleuro-pneumonia 4 months previously.	Dulness from angle of scapula down. High temperature.	Yes.	Opened abscess, size apple, in lower left lobe. No communication with bronchus found.	Recovered.	
Quincke, Berl. Klin. W., 1888, No. 18.	Male, 26.	Pneumonia 2 years before in left lower lobe.	None given.	None.	Zn Cl_2 paste applied and 9th rib resected. Three weeks later pus discharged through wound.	Alive 12 years later (1896), with fistula.	
Quincke, Mittheilungen aus den Grenzgebeiten, 1896.	Male, 25.	Double pneumonia 2 months before, complicating older bronchiectases.	Periodical expectoration of large quantities of pus. Dulness over 8th space (left). Bronchial breathing, metallic râles. Dulness from 5th left rib down in front. Later amphoric breathing and large moist râles.	Only partially before paste used.	Zn Cl_2 paste to cause adhesion; 9th, 10 and 11th ribs resected. Opened into cavity communicating direct with bronchitus. After operation, sputum greatly decreased.	Recovered in 2 months.	
Quincke, same place.	Male, 34.	Pneumonia 17 years before, and again 2 years before.	Respiratory mobility decreased on left side. From 7th dorsal spine down dulness; bronchial breathing, metallic râles. Paroxysmal expectoration of large quantities of non-fetid sputum.	Doubtful before paste used.	After paste (Zn Cl_2) used, pneumotomy, five weeks later. Pus evacuated and cavity drained.	Much improved; still has fistula.	
Osler and Halstead, Johns Hopkins Hosp. Bulletin, Dec., 1890.	Male, 60.	Pneumonia several times. Exact date not known. At intervals hemoptysis and putrid expectoration for years.	Loud resonant râles, amphoric breathing, and metallic râles in left axilla. Loud bubbling râles at base of left lung. Respiration, 40; temperature, 100. 3-600 c.c. Fetid expectoration daily.	Yes.	Resected 4th and 5th ribs and opened freely a series of cavities.	Died 3 days after operation. Too weak to react.	Showed that they had opened into a system of large bronchiectatic cavities in left upper lobe.
Kijewski, Centralb. f. Mitthaus den Grenzgebieten der Inn. Med. und Chir., No. 4, 1901. Also Gazette Lekarske, No. 4, 1897.	Male, 32.	Right-sided pleuro-pneumonia, followed by a severe dyspnea and cyanosis some time before.	Pyemic type of fever. Dulness over right lower lobe.	Yes.	Resection of 10th rib after successful exploration had shown pus. Lung curetted and packed with gauze. Fever continued for some time.	Recovered.	
McRae, Atlanta, Ga.	Male, 19.	Lobar pneumonia, 3 weeks later purulent expectoration began. 1 year, 7 months previous to operation.	Third rib at spine to base of lung, right axillary side dulness, bronchial breathing, small and large moist râles. Outside lower angle scapula, area 2 inches in diameter, metallic resonance, voice sound metallic in character.	Yes.	Fifth and sixth ribs resected; aspirated pus; cavity 3 inches in diameter in lung opened; tubular and gauze drainage; fever and cough disappeared immediately.	Recovered rapidly.	

TABLE IV.—CHRONIC PUTRID ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
Körte.	Male, 33.	Pneumonia 10 months previously.	Tympany, gurgling râles, amphoric breathing below right clavicle and in axilla.	Yes.	Curved incision. Pectoral muscles divided. Exploratory puncture negative. With thermo-cautery opened large cavity filled with fetid fluid, and gangrenous lung.	Recovered in 18 weeks.	
Körte.	Male, 29.	Pneumonia 2 years previously.	Tympany in front. Dulness behind, over left upper lobe; no respiratory murmur over entire lung. Many râles over dull area. Typical 3-layer fetid sputum.	None.	Pleura sutured. Marked cyanosis. No further operative measures.	Died four days after operation.	Entire left apex composed of a system of communicating bronchiectatic cavities.
Körte.	Male, 23.	Duration, 7 years.	From angle of scapula down, bronchial breathing and dulness.	Yes.	Exploratory puncture revealed putrid pus. Pneumotomy. Putrid abscess emptied; left lower lobe near it was encapsulated empyema.	Recovered in 4 months.	
Körte.	.....	Pneumonia, 5 months previously.	Absolute dulness; no respiratory sounds from 3d rid down, on right side. Diagnosis before operation was putrid pyema, and gangrene of lung.	Yes.	Thoracotomy. Pus evacuated. No communication found with abscess cavities. Patient remained septic.	Died in 10 days.	Showed two large abscesses in right lower lobe, not opened and diffuse bronchiectasis.
F. Krause.	Male, 36.	Pneumonia 9 months previously of left lower lobe.	Dulness, amphoric breathing, moist metallic râles near angle of scapula. Lower down, dulness, diminished respiratory sound and fremitus. Bad odor to expectoration and elastic fibers.	None.	Pleural cavity tamponed, opened 5 days later, when adhesions were found. Cavity in middle of lower lobe opened, size of an apple, containing putrid fluid, and large sequestrum of lung tissue.	Recovered in 3 months.	
Hadra, Centralblatt f. Chirurgie, 1897, p. 103, supplement.	Female, 38	Severe pleuro-pneumonia 8 years previous, since then invalidism.	Large quantity of putrid sputum. X-ray showed shadow entire left lung, heart displaced. Over right lower lobe dulness, and when full expectoration, tympany. Exploratory puncture negative.	Yes.	Pneumotomy, abscess cavity opened.	Recovered.	
Krause.	Female, 19	Pneumonia of left lower lobe and left-sided pleurisy with effusion, 6 months previously.	Dulness over left lower lobe.	Yes, at first operation; at second, lung retracted.	At first operation found empyema with greatly thickened pleura. Fever and expectoration increased after operation. Sputum putrid and contained elastic fibers. No physical sign of a cavity. A second operation, decorticalized the lung and looked for abscess cavity in vain over both uper and lower lobes. Two abscesses opened spontaneously into dressings.	Healed 5 months later.	
Jas. H. Dunn (Minneapolis). Unpublished case.	Female, 22	Pneumonia 4 years previously.	Expectorated cupful fetid pus daily, usually at one time. Signs of cavity on right side posteriorly.	None.	Two operations: one between scapula and spine; other in axilla. Some pus discharged from posterior opening, but no improvement, probably large cavity not opened.	Died 1 year after operation.	
Wiemer, Centralblatt f. Chirurgie, 1898, p. 183.	Male, 33.	Pleuro-pneumonia 2 years before.	Dulness over left lower lobe. Tympany in axillary and angular line. No respiratory mobility. Putrid sputum in large quantities.	Yes.	Resected 8th-10th ribs; opened cavity with cautery, size adult fist. Contained large sequestrum. On 4th day after operation found a second cavity.	Healed in 6 weeks.	
Williams and Marshall, Lancet, Dec. 30, 1882, p. 1107.	.....	Chronic pneumonia of both lungs, and fetid expectoration, for 1 year.	In right lung symptoms of a cavity.	Probably.	Inserted trocar and drained cavity.	Died 6 weeks after operation.	Multiple bronchiectases in right lung. Largest had been drained. Death due to gangrenous cerebral abscess.
Priestley, Leech, Lancet, Jan. 13, 1894.	.....	Pneumonia 6 months before, followed in 2 months by fetid expectoration.	Dulness from 2d rib down on left side with absent vocal fremitus and resonance. Respiratory murmur decreased. No elastic fibers. No signs of cavity.	Yes.	Exploration in 2d interspace showed pus. With needle as guide, introduced drain. Pneumonia 2 weeks after operation. No ribs resected.	Recovered 8 months after operation.	
Quincke, Berl. Klin. Woch., No. 19, 1887.	Male, 26.	Pneumonia 2 years before; since then fetid expectoration.	Dulness from 4th dorsal spine down, and as far anterior as axilla. Loud amphoric respiration, and voice. No change with changed positions.	None.	Resected 9th rib; found no cavity, but 3 weeks pus discharged from wound spontaneously. Second resection 6 months later to close cavity.	Discharged with fistula. Able to work.	

Quincke, Berl. Klin. Woch., No. 18, 1888.	Male, 32.	Atypical pneumonia 3 months before.	Dulness on right side, with no sharp boundaries, to spine of scapula and mammary line. Loud bronchial breathing and metallic râles. Very purulent fetid sputum.	None.	$Zn\ Cl_2$ paste in 8th intercostal space, followed by adhesion. Resected 8th and 9th ribs, and again applied zinc paste. After days later abscess opened.	Recovered in 4 months.	
Burgess and White, Lancet, April 16, 1898.	Female, 25	Pneumonia (?) 3 years before.	Hectic fever, large amount putrid sputum expectorated. Lower left lobe dull. Decreased vocal fremitus and resonance.	Yes.	Found circumscribed pleural effusion beneath it; abscess drained.	Recovered in 2 months.	
Sutton (quoted by Mosler), "Lungen-Chirurgie," 1883, Wiesbaden.	.....	Acute attack pneumonia 5 years before; 2 years later a severe hemoptysis.	Signs of cavity in left lower lobe, with fetid expectoration.	Yes.	Incision in 6th intercostal space. Drained. Daily irrigation with carbolic solution.	Died suddenly on 31st day.	No cause found for death. Cavity occupied entire lobe.
Oehler, Munchener Med. Woch., 13, Oct., 1891.	.....	Three years before had gangrene following pneumonia of left lower lobe. No cavity signs. Shortly before operation had after influenza a fresh pneumonia.	Chills, dyspnea, dulness, bronchial breathing, and metallic râles.	Not at first, but at second operation (4 weeks later).	Exploration negative. Seventh rib resected, followed by pneumothorax. Latter soon disappeared. Second operation (4 weeks later) found pleura adherent; could not find cavity but inserted tube. On second day pus discharged.	Still had fistula.	
Kummell, Centralblatt fur die Grenzgebieten der Innern Medicin und Chirurgie, 1901, No. 3.	Female.	Left lower lobe pleuro-pneumonia, 2 years before.	Not given.	Yes.	Resected 6th and 7th ribs. Puncture. Thermo-cautery. Very severe hemorrhage. Cavity size of egg, communicating with large bronchus.	Small fistula after 6 months.	
Quincke, Mitth. a. d. Grenzgeb. d. Inn. Med. u. Chir., 1896.	Male, 34 (Case 6).	Influenza, pneumonia 1½ years before.	Over left apex in front signs of cavity. Dulness behind, marked from 5th dorsal spine down; bronchial breathing, large moist râles.	Yes.	Resected 3d rib in axillary line. Incision into cavity evacuated fetid pus and mucus.	Died 1½ hours after operation.	Death due to weakness soon after operation. Small bronchiectatic cavity in upper lobe; system of cavities in lower lobe; one opened.
Northrup and McCosh, N. Y. Med. Journal, vol. 1, 1897.	Female, 23	Influenza, pneumonia, 6 months before.	Flatness from 3d rib down over right lung in front. Absence of respiratory sound and râles.	Yes.	Resected 6th rib and opened abscess in lower lobe, containing 3 ounces of thick and very fetid pus. Severe shock followed.	Recovered in 3 months after operation.	
Blunt, Lancet, 1888. Vol. 1, p. 622.	Male, 29.	Pleuro-pneumonia of right side; 2 weeks later fetid expectoration, which continued to time of operation, 3½ months later.	Hectic fever, sweats. Exploratory punctures showed fetid pus.	Yes.	Resected rib 1 inch below angle of scapula; used needle as guide, and opened gangrenous cavity. Drained.	Recovered in 6 weeks.	
Tuffier, Bull. de la Soc. de Chir., 1895, p. 765.	Male, 41.	Pneumonia with fetid expectoration 4 months before.	Dulness in front over right lung, amphoric breathing and moist râles. Severe hemorrhage 5th day after operation.	Yes.	Incision in 3d interspace, opened cavity size of turkey egg. Opened another cavity above it; both contained black blood mixed with lung débris.	Recovered in 3 months.	
Eisendrath.	Male, 60.	Right lower and middle lobe pneumonia 2 years before; since then fever, expectoration of large quantity of pus (3 pints daily), frequently fetid; emaciation; dyspnea, etc.	Respiration, 60; pulse, 126. No change in percussion anteriorly over right lung. Behind from scapula down area of dulness, size of palm of hand; also some bulging of intercostal spaces here. Over this area a few moist râles to be heard. Diagnosis made of gangrene of lower lobe.	Yes.	Resected 8th and 9th ribs under angle of scapula, entered free pleura cavity, upper lobe collapsed, marked dyspnea and cyanosis. Lower lobe found adherent in front. Resected 9th and 10th ribs in anterior axillary line, pleura adherent; opened a circumscribed empyema, and beneath it opened gangrenous cavity in lower lobe, and a small cavity in middle lobe containing pus. Drain and gauze inserted.	Died 12 hours after operation.	Found cavity size of fist in right lower lobe (gangrenous). Adhesions bound lower lobe to chest wall. Had also opened one of a series of bronchiectatic cavities in middle lobe. Some hemorrhage into pleura cavity.
McRae, Atlanta, Ga.	Male, 59.	Left lobar pneumonia, followed 10 days by large quantities fetid pus; constant chest pain; slept sitting until operation, 6 years after pneumonia.	Third rib, at spine, to lower border of heart, dulness, bronchial breathing and moist râles. Angle of scapula to near spine, area 4 inches in diameter, metallic tympanitic sound on deep percussion; tapped lightly, none.	Yes.	Fifth and sixth ribs resected under angle of scapula; aspirated pus; thickened pleura removed; pus cavity, size of fist, in lung opened; 8-12 oz. pus, and calcareous deposits; tubular and gauze drainage.	Two months later, cavity 1½ inches in diameter, fistula; respiratory murmur clear to cavity. Two mos. later sinus closed; cure complete.	

THE INOPERABLE NATURE OF THE PULMONARY TUBERCULAR LESION.*

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In no department of surgery have the advances of the past few years been more signal than in that which pertains to the surgery of the chest. Conditions which, as recently as ten years ago, were considered to be irremediable by any method of treatment or were, perhaps, classed among the hopeless medical cases, have now been transferred to the domains of surgery and surprisingly good results have been obtained. The pericardium and the heart have been invaded; the mediastinum has been employed as an avenue of approach; lesions of the pleura that have previouslv been considered as hopeless have been brought within the pale and the surgery of the lung has become established on a firm scientific basis.

Perhaps the most fascinating part of chest surgery is that which concerns the lung, since it is here that best results have been obtained. Acute simple abscess of the lung and acute abscess following acute gangrene of the lung may now be treated medically for from four to six weeks. Then should the healing process fail to progress favorably, it is the opinion of the best observers that this case becomes surgical and that the cavity should be drained from outside. Such operative treatment has resulted in the recovery of 90 per cent. of simple abscesses and 61 per cent. of acute gangrene abscesses, while a small percentage in each are improved. The operative treatment of abscess following the lodgment of a foreign body has been somewhat less successful but is an imperative operation. The operation for chronic abscess of the lung has not thus far yielded good results, yet the results following chronic lung gangrene abscesses are very encouraging. The treatment of empyema has been very greatly facilitated by knowing that a majority of cases of empyema are the result of the rupture of a lung abscess into the pleural cavity. The treatment of bronchiectatic cavities by surgical operation has been so extremely unsatisfactory by reason of its high mortality (80 per cent.) and a failure to obtain results, that it can not be considered to be a justifiable procedure except in those few cases in which the cavity is single and of the saccular variety. The extirpation of echinococcus cyst of the lung has yielded 91 per cent. of recoveries. As a further element in the development of surgery of the lung, it must be stated that a technic and an experience has been developed which convinces us beyond question that the pleural cavity can be opened for operative procedure on the lung, even for abscess, without the slightest reference to the presence or absence of pleural adhesion; that the lung tissue can be incised, excised and sutured; that an individual can live with but one lung; and lastly, that the cavity left after the collapse or excision of lung tissue may be filled by the excision of the ribs and caving in the chest wall.

It is but natural that the very first success in lung surgery should suggest the question, can this be applied to that most dreaded of all lung conditions—pulmonary tuberculosis? Nor is it surprising that each new success of lung surgery should call forth every and repeated effort on the part of the surgeon to bring some part of or the entire disease within the surgical field. Such attempts have been made, many cases are reported and some writers already insist upon the excision of diseased tissue and the drainage of cavities in all cases of pulmonary tuberculosis where this is possible.

HISTORICAL SUMMARY.

It is but a natural inference that tuberculosis of the lung remained a *noli me tangere* up to the introduction of aseptic surgery. Mosler first took advantage of this surgical advance and caused the exposure, incision and cleansing of a tubercular cavity by the surgeon Heuter, in 1873. This operation was not followed by a favorable result. The animal experimentation of Schmidt, Bloch and more particularly, Gluck, demonstrated beyond question, however, that portions or entire lobes of the lung could be safely resected. Then the circle of proof seemed to be completed when Biondi resected and completely cured an artificially induced tubercular focus in the lung. Pneumectomy at once replaced pneumotomy and the radical removal of the tubercular focus seemed to be as rational as that of malignant tumor. This belief was only strengthened by the demonstration of the tubercle bacillus in 1882 by Koch.

Ruggi attempted the excision of a tubercular focus in the lung of a man and the patient promptly died. This result served as a lasting set-back to surgical enthusiasm in this direction, and not until the discovery of Koch's tuberculin was interest regained. It was now supposed that the tuberculin would destroy all tubercle bacilli, and that there would be left to the tissues the burden of casting off the tuberculous tissue, of overcoming the mixed infection and healing destruction cavities. Tuberculosis seemed to be cast at a bound into the realm of surgery. The exposure and incision of cavities (pneumotomy) now seemed to be the operation indicated. Tuffier has collected the statistics of 27 cases treated by this method up to 1897. None of these patients were cured of tuberculosis, many died as a result of the operation, and only one survived for more than a few months. This one case (of Sonnenberg) lived five years, and the cavity filled up with scar tissue, yet tubercle bacilli never disappeared from his sputum and at the time of his sudden death a disseminated miliary tuberculosis and a cavity the size of a hazel nut were found in his lung. It is, of course, needless to state that this intoxication was soon over and that nothing is now heard of the method.

SUMMARY OF REPORTS FROM MANY AUTHORS.

TUFFIER has found the apex of the lung the seat of a tuberculosis in which the pleuritic adhesions were coextensive with the tubercular process and in which the entire tubercular area was excised as though it were a tumor. This case is reported recovered.

LAWSON of Hull has excised an apex with persistence of a sinus.

DOYEN has performed a similar operation.

PORRIT recommends the excision of all tubercular tissue possible and states that the excision must be thorough, inasmuch as an error of one-half inch may jeopardize the results of the operation.

LANE states that there must be a time in every case of undoubted tuberculosis of the lung when surgical cure is possible, and enters a plea for early operation in such cases. He would advise the excision of tuberculous tissue.

FERGUSON has reported a case in which a fluctuating swelling under the clavicle was incised and found to be a tubercular abscess secondary to pulmonary tuberculosis. The lung was subsequently opened, no cavity was

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

found in the tubercular mass, which was located opposite the fifth rib, but one dram of iodoform powder was placed in the center of this mass and the wound in the lung firmly packed with iodoform gauze. The patient recovered and gave no evidence of tuberculosis at the time of the report.

NAENTJENS reports a similar case in which a small swelling appeared in the axilla during the course of a slowly progressing pulmonary tuberculosis with cavity formation. This swelling was incised, found to contain pus and to communicate with the lung cavity. The lung cavity was opened and the wound tamponed with iodoform. Sinus persists. Patient improved but not well.

MALBOT reports a case of tuberculosis in both lungs. In left upper lobe a superficial cavity had led to inflammation in the skin over second intercostal space. A free incision in second intercostal space opened lung cavity.

Fig. 1.—Normal lungs with bronchi and blood vessels filled with Kaiserling solution. Anterior views.

Recovery in three months with an improvement in his general condition.

FREYHAN has collected 13 cases in which cavities of the lung had been drained. Two recovered and the remainder died either immediately from the operation, or at varying intervals after the operation from tuberculosis. One of these cases of recovery is that of Sonnenberg, included under the table of Tuffier.

WILLS reports 2 cases in which the drainage of tubercular cavities in the base of the lung resulted in the recovery of the patients from their tuberculosis. He advises the general application of the operation.

TURBAN proposes to attain a condition of rest and furnish conditions favorable for cicatrization of cavities and areas of destruction by extensive thoracoplasty, in which a number of ribs are excised in considerable part and the chest wall is allowed to fall in on the contracting lung. This operation is entirely extra-pleural.

SPENGLER has operated according to the same method.

PORRIT reports three cases operated on by this method, combined with excision of lung tissue with three deaths.

FRANKE has combined the drainage of a cavity with thoracoplasty and obtained an improvement in the condition of the patient, but the sinus persisted for two years, when the patient died of an intercurrent disease.

GARRE has recently stated that operation for pulmonary tuberculosis is indicated under three conditions: 1. The broad opening, drainage and tamponage of a cavity is justified in those cases where there is a damming up and decomposition through mixed infection by the pyogenic cocci and the appearance of septic fever. 2. The broad exposure, excision of infiltrated lung and extensive thoracoplasty is indicated where isolated cavities exist and where the tubercular focus is limited to the lower lobe. 3. The immobilization of the chest wall or of the lung is recommended by the production of an artificial pneumothorax according to the method of Murphy.

QUINCKE, who has made the most signal contributions to the surgery of the lung, recommends immobilization of chest by thoracoplasty when the lesion is located in the apex. He has drained cavities with unfavorable results. He believes that only the fibroid type of phthisis

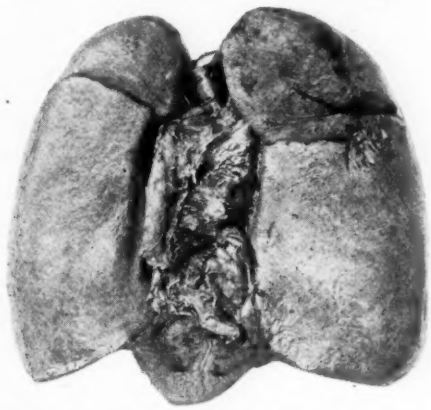

Fig. 2.—Normal lungs. (Posterior view.) Shows the high position of the fissures posteriorly. The irregularity in the right lung is due to an adhesion and to a creasing during the hardening process.

should be subjected to operation, and then to the operation of immobilization.

FRANKE joins with Quincke in this belief.

HEARNE gives as one of the indications for surgical intervention in diseases of the lung, a single tubercular abscess with retained secretions, high fever and a localized tubercular involvement of the lung tissue.

MURPHY has recommended the complete immobilization of the lung by injecting nitrogen gas into the pleural cavity for the purpose of inducing an artificial pneumothorax. By this means the lung is completely collapsed against the spinal column.

LEMKE reported 53 cases in 1899 treated by this method with results which seemed to be favorable. Dr. Lemke has stated in a recent personal letter on this subject that he has been using the method continuously during the past four years and that his results are very gratifying.

POSTMORTEM INVESTIGATIONS.

With a view to determining the possibilities of operative interference in pulmonary tuberculosis, I have spent some time during the past year and a half in the study of the lesion as presented in the autopsy room and the hospital wards. This study has been pursued in autopsy material by serial sections made from lungs pre-

pared as follows: The thoracic contents were removed *in toto,* then the bronchi and blood vessels were filled with a Kaiserling solution to a degree that would restore the size of the lung to that which it possessed in the living state. The lungs were then immersed in Kaiserling solution until hardened. Normal relations were preserved in this way and the lesion studied in serial section. In the pursuit of this study I am greatly indebted to Dr. B. F. Lyle, physician, and Dr. Louis E. Cook, pathologist, to the Cincinnati Branch Hospital for contagious diseases. The study of clinical material has been conducted through the further kindness of Dr. Lyle as a review and statistical arrangement of 978

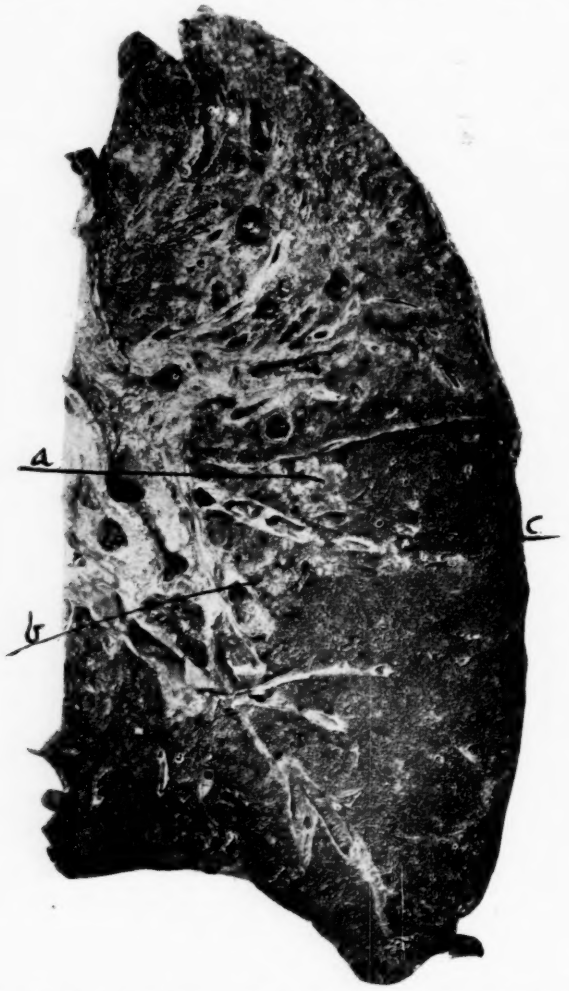

Fig. 3.—Tubercular lung. The lesion was diagnosed as a lesion confined absolutely to the upper part of the upper lobe. No refinement of physical diagnosis could have detected the tubercles at *a, b* and *c.*

cases of pulmonary tuberculosis treated at this hospital during the past five years.

It has been my purpose to determine the most common location of the pulmonary tubercular lesion; the extent of lung tissue involved in the course of the development of the different stages of the disease; the location of the secondary involvement; the possibility of excising the lesion in its first or second stage; the presence and extent of pleuritic adhesions; the location of cavities, their accessibility, their operability; the frequency with which a tuberculous cavity becomes an acute abscess; and lastly, the nature of the usual septic process in phthisis.

A study of the distribution of the lesion would show that in 0.93 per cent. of the cases one apex alone was involved. In 1.0 per cent. both apices were involved. In 1.3 per cent. one upper lobe and the opposite apex were involved. In 3.6 per cent. both upper lobes were involved. In 8.5 per cent. two upper and one lower. In 2.6 per cent. one upper and one lower on the same side. In 1 per cent. the entire lung on one side and the apex on the opposite side. While in 74.9 per cent. of these cases both upper and both lower lobes were involved. In estimating the extent of lung involvement it has been considered that when the physical signs of tubercular involvement extended below the fifth rib posteriorly, that the apex of the lower lobe was involved. An apex involvement of the lower lobe is included under the heading of lower lobe involvement.

TABLE SHOWING DISTRIBUTION OF LESIONS.

	Per Cent.
One apex alone	.93
Two apices alone	1.00
One upper lobe alone	2.30
Two upper lobes alone	3.60
One upper and one lower in same side	2.60
Two upper and one lower	8.50
One upper and two lower	1.20
One upper and opposite apex	1.30
One upper and lower and opposite apex	1.00
Two upper and two lower	74.90

In 14.5 per cent. of the cases the patient gave a history of having had pleurisy at some time during the past few years, while physical examination revealed pleurisy in 30 per cent. of cases. In none of the cases coming to autopsy were the lungs free from adhesions.

Fig. 4.—Tubercular lung. A most careful physical examination located the sole lesion at (*a*) with apex free. At the autopsy only one other area was found at (*b*), so remote from the surface that no clinician could have detected it.

Emaciation of a pronounced character was present in 82.6 per cent. of cases, slight in 14.6 per cent. and absent in 2.8 per cent.

This table of statistics will show that the majority of the cases treated in this hospital are advanced cases of pulmonary tuberculosis, but it must be remembered that every case treated at this hospital is admitted on his first application for medical aid and that these physical examinations are made at the time of application. Furthermore, I should like to append a statement that the recorded results of physical examination

made by Dr. Lyle confirm so perfectly in every case of death to the autopsy findings that I have the very greatest faith in the entire accuracy of the records of those cases in which no autopsy was made. It is a fact demonstrated by this table that patients apply late for medical aid in pulmonary tuberculosis, and I believe that if we are going to recommend surgical intervention in this disease that it must be applicable to hospital cases as they apply for treatment, and that these statistics will possess surgical value.

THE QUESTION OF EXCISION.

The surgical results obtained by the excision of tubercular foci in any part of the body seem to depend entirely upon the completeness with which the tubercular disease is removed. It must necessarily follow that good results from the excision of a tubercular focus in lung tissue must depend entirely on, 1, the complete excision

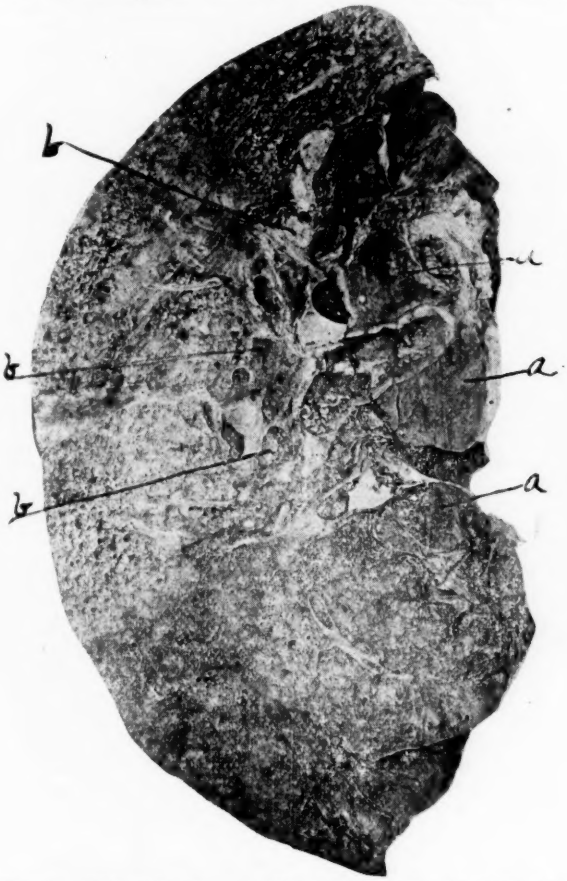

Fig. 5.—Tubercular lung, with extensive involvement of the tracheal, bronchial, and peribronchial lymph nodes, *a, b*. Excision impossible.

of the diseased focus; 2, the absence of other foci in other parts of the lungs which will serve as centers of infection quite as dangerous to the individual as that which is excised. The entire tuberculous lesion in the lung must be excised.

The operation of excision will manifestly be excluded from consideration in cases showing involvement of all four lobes (74.9 per cent.), in involvement of an upper and lower (2.6 per cent.), in two upper and one lower (8.5 per cent.), one entire side and the opposite apex (1.3 per cent.), and when both upper lobes are involved (3.6 per cent.). Autopsy findings would indicate, furthermore, that when a tuberculous process has invaded an entire upper lobe (2.3 per cent.) there are probably foci elsewhere in the lungs, which will render this lesion likewise inoperable. The sum total of the cases that will be inoperable from the view point of excision is 98 per cent. Apex cases alone, which constitute the remaining 2 per cent. of cases, can be looked upon as cases suitable for excision. This percentage is very small. The percentage would be somewhat raised should cases seen in private practice be arranged in statistical form, yet it would be unwise for us to allow our surgical zeal to obscure our better judgment and cause us to forget that a very large percentage of these cases of apex tuberculosis, as well as many presenting an extensive lung involvement, are cured by climatic, dietetic and hygienic treatment.

It is advised repeatedly by writers on this subject that the operation of excision should be practiced only on those cases presenting isolated circumscribed tubercular involvement of the lung tissue or in isolated cavities. That this condition rarely exists pathologically and that such a diagnosis absolutely can not be made is a fact that has been demonstrated repeatedly in the past and which is demonstrated again by my own specimens and

Fig. 6.—Tubercular lung. Entire upper lobe one mass of intercommunicating cavities, middle lobe solidly pneumonic, lower lobe normal.

physical examinations. It is impossible that six or sixty miliary tubercles distributed throughout the lower lobe of a lung or located 1 c.m. beyond the line of incision that would be indicated by physical signs could be detected by any known clinical method. An excision of only a portion of a pulmonary tuberculous lesion would be useless if not positively harmful. A tuberculosis confined to one apex alone without tuberculosis in other parts of the lung would certainly be a lucky condition, and we may not operate with a chance of luck alone in our favor. As far as I know the only cases that have thus far been treated by the method of excision are those of Tuffier, Doyen and Lawson. Of these only one was successful, and microscopic examination in this case revealed only an induration of the excised lung tissue.

Excision of tubercular foci in the lung would seem to be both impossible and irrational.

THE DRAINAGE OF CAVITIES.

The second surgical procedure that will claim our attention is the drainage of tubercular cavities. This is practiced, 1, to promote cicatrization; 2, to liberate pent-up pyogenic secretions; 3, to cause cavities left by a healed tuberculosis to cicatrize. A tubercular cavity in the lung is a result of the necrotic element in the tuberculous lesion. Tubercle bacilli lodge in a number of spots in the lung structure, each perhaps separated from another by a varying number of millimeters, and typical miliary tubercles develop. Each tubercle possesses a characteristic globular form about the size of a millet seed; it is made up of an aggregation of epithelioid small round and giant cells; these cells are supported by a stroma, the structure is devoid of blood vessels and the center is usually occupied by caseous material.

Among the many characteristics of a miliary tubercle two are of particular importance in the present study: 1, the absence of blood vessels in its structure; 2, the presence of the toxin forming tubercle bacillus. The entire nutrition of the cells which make up the structure of the tubercle must be carried on by diffusion or by percolation of the body juices from its surface. A poor nutrition, one most marked in the center of the globular mass of cells, is apparent. Added to this burden is the degenerative influence of the toxalbumin of the tubercle bacillus, and the result is invariably a peculiar type of necrosis known as cheesy degeneration. This occurs in the center of the tubercle. The miliary tubercle becomes divided into a crust of tubercular tissue which grows peripherally and in which the bacilli are active and a central caseous mass. Approximated tubercles fuse together by this peripheral growth and form large masses of necrotic cheesy matter. The escape of such a tubercular mass by way of the air passages leaves a ragged hole in the lung tissue. Such cavities have rough, irregular walls made up of cheesy material, which by crumbling away gradually increases the size of the cavity. They contain cheesy matter, detritus, serum, mucus and sometimes pus. Outside of the lining cheesy layer is a thickness of 1 to 4 c.m., which is made up of typical tubercular tissue without blood vessels, a layer of active tubercular extension most active in the portion most remote from the cavity. When nature fights a fairly good battle varying amounts of connective tissue are deposited in this layer, even to the complete arrest of the tubercular process.

To sum up, we have a cavity with a non-vascular, therefore non-regenerative wall of tubercular tissue which has a constant tendency to extend peripherally and a lining of dead tissue containing no germs of the disease. In a simple pyogenic abscess the seat of germ activity is in the lining membrane, the wall of the abscess cavity is filled with budding blood vessels and reparative granulation tissue cells, and all surrounding parts not already necrotic are well supplied with nutrition. Conditions are entirely dissimilar, and it would seem irrational from the start to drain a tubercular cavity simply because the drainage of simple abscesses has given such brilliant results. Drainage alone can accomplish nothing since tubercular cavities usually contain innocuous material, and such drainage can in no way affect the surrounding tubercular tissue. In the next place, there is no tendency to the formation of granulation tissue on the interior of such cavity, and in those cases in which it might perchance occur anatomic conditions are opposed to the contraction of the cavity. The apex of the lung is encased in a firm, unyielding bony box. Added to this, pleuritic adhesions always glue the surface of the lung to the interior of this box and the reparative formation of cicatricial tissue will always pull toward the long surface, thereby artificially enlarging the size of the cavity instead of promoting healing (Gerulanos, Quincke). An incision into such a cavity could not be expected to accomplish much.

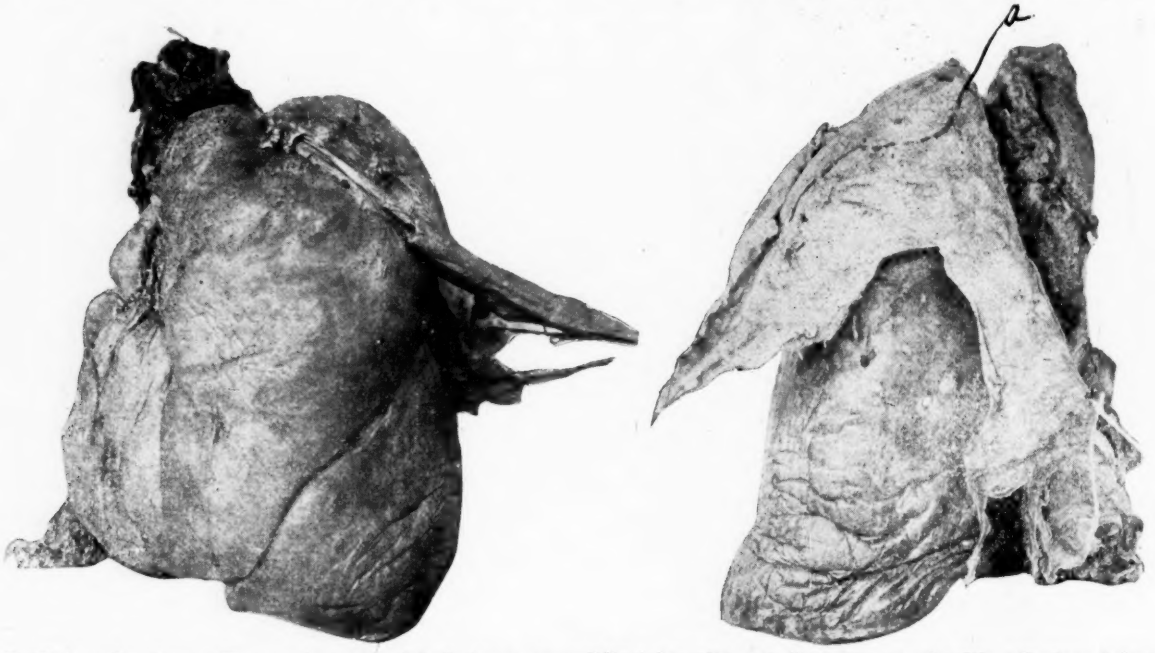

Fig. 7.—Tubercular lung. The greater part of both lungs are solidly tubercular, yet there are no pleuritic adhesions below the extreme apex. Adhesions only above line *a*.

It has been stated that the operative treatment of tuberculous cavities becomes imperative in those cases in which the cavity secretions become retained and infected by the pyogenic germs, and that we are in reality called upon to treat an acute abscess of the lung

(Kümmell, Garré, Hearne). Here arises that great subject of lung sepsis in pulmonary tuberculosis which I can not hope to discuss further than to make the following statements regarding this question of retained and infected secretions: 1. The vast majority of lung cavities are located in the apex or in the upper lobe of the lung, sites shown by Quincke to be most favorable to drainage through a bronchus. 2. In the 978 cases studied, Dr. Lyle has not seen a single one in which a cavity has been the seat of such an infection and operation a possible element in the relief of symptoms. 3. The very chemic nature of caseous material (representing as it does a product so low in the scale that it is incapable of further disintegration) makes it an unfavorable if not actually an impossible culture medium for pyogenic germs. 4. Should such infection and decomposition occur often or at all, patients with cavities would certainly have very bad breaths. This is not true. Cavity patients rarely have a stinking breath. 5. Mixed infection in the area of active tubercular inflammation—the active septic pneumonia—in lung tissue not in cavity, is unquestionably the element that plays the part of importance in the septic cases. 6. I present the temperature charts of three patients who have cavities for five, three and two years respectively. These temperature curves are merely samples of all these cases. They are neither high nor septic, and these men have been subjected to all of the vicissitudes of the climatic conditions. 7. The majority of tubercular cases do not run high temperatures at any time. In this series 25.5 per cent. of the cases treated run an average daily and weekly temperature below 99 F., 24 per cent. between 99 and 100 F., 20.7 per cent. between 100 and 101, 14.8 per cent. between 101 and 102, 10.4 per cent. between 102 and 103, while 5.2 per cent. gave an average daily temperature above 103. In general it may be said that in 70 per cent. of cases the temperature was never above 101, and in 85 per cent. of cases never above 102. Furthermore, septic temperatures are not found. 8. The persistence of a sinus is the usual result after drainage, and most of the patients so treated have been more annoyed by this than by the severe symptoms; some have said that death was preferable.

It has been said that those cavities occurring in individuals in which the tuberculosis has become entirely healed can be closed down by operative treatment and the patient cured of his cavity. 1. In the first place such cavities do not usually give these patients great annoyance, a fact abundantly supported by clinical experience and by the autopsy reports of Furbringer and Von Leyden, who have frequently found isolated cavities which had existed for a great many years in the apices of very healthy-looking young people. 2. Should we grant the possibility of effecting a cure in this way, it would be impossible to say just when the tuberculous process has become healed. 3. Operative interference in a cavity that had progressed just short of complete healing has resulted in the development of disseminated miliary tuberculosis and hastened death (Mosler, Kurz). Finally, should it be granted that certain cavities might be opened to operative treatment by drainage there would yet remain the great difficulty of selecting these cases by physical examination. The value of operation on a supposed single cavity would be annulled by the discovery at the time of operation of other smaller cavities which could not have been diagnosed by known physical signs. The Roentgen ray has failed to detect cavities with a degree of accuracy that would give the method diagnostic value.

Sarfert, who has been a zealous advocate of the operative treatment of pulmonary tuberculosis, has been forced to acknowledge that perhaps among hundreds of cases of cavity only a single one may be suitable for operation. Borchert states that the discovery of tubercle bacilli in the sputum is an absolute contraindication to operative procedure, even when the original condition was known to be a chronic simple abscess and the tubercular infection secondary. Körte arrives at similar conclusions. The evidence against the drainage of tubercular cavities would seem to be so overwhelming that I believe the method should not be included within the scope of surgical attack upon the lung.

While the purpose of my paper in reality ends with this attempt to demonstrate that the tubercular lesion is an inoperable one from the view point of excision and the drainage of cavities, I beg your indulgence for the very brief consideration of two other surgical methods of treatment which I believe to possess value.

THE NITROGEN COMPRESSION METHOD.

The treatment of tuberculosis of the lungs by compression with nitrogen, after the method of Murphy, has now been employed by several observers, notably by Lemke, for four years, and the results obtained thus far are certainly very promising. Any method for the

Fig. 8.—Tubercular lungs. Right lung had been compressed to spinal column for a long time by a hydro-pneumothorax.

treatment of this extremely chronic disease can not be said to be established until a sufficient number of years have elapsed to determine the existence of a permanent cure. The method of nitrogen compression is on trial and seems to be a rational procedure.

The good effects of compression, locally, as given by Lemke, are brought about by the limitation of areas of disease already existing by, 1, favoring fibrosis in and about these areas; 2, by occluding the avenues of the dissemination of the virus, and 3, by compressing cavities to enable them, mechanically, to heal. Other effects of compression are due to, 1, rest to the organ as a whole; 2, emptying of secretions; 3, prevention or diminution of absorption of toxic bodies; 4, prevention of secondary infections; 5, the diminished tendency to hemorrhage.

Granted the truth of all these statements and the safety of the operative procedure, the question of the applicability of the method must naturally arise. The application of the method presupposes a pleural cavity, into which the nitrogen gas can be injected in sufficient quantity and diffusion to cause a collapse of the lung. We all know perfectly well that there are many cases

in which there is no pleural cavity at all, and that the vast majority of cases of advanced tuberculosis possess adhesions of varying degree. Approximately, 90 per cent. of the autopsy cases examined presented adhesions so extensive that collapse of the lung would have been impossible by the nitrogen method. In others, the lungs might have been collapsed below the level of the fourth or fifth rib, but the entire apex, that portion inclosed in the truly rigid costal box, could not have been influenced much by the pressure. One case would seem to demonstrate that disseminated or irregular adhesions need not be a barrier to the employment of the injection. This specimen was taken from a case of tuberculosis that had suffered a complicating pneumothorax. The old adhesions between the visceral and parietal pleura were so pulled upon by the collapsing force that they were stretched to a band 5 c.m. long. A similar stretching of bands might be expected to occur after nitrogen injection.

Autopsy findings demonstrate another condition of great practical importance, namely, that pleuritic adhesions are usually not coextensive with the pulmonary lesion even when this lesion underlies the parietal pleura. In illustration of this point I would present a photograph (Fig. 7) of a lung in which the entire upper and the greater part of the lower lobe are the seat of tubercular consolidation and extensive destruction. The parietal and visceral pleura are adherent, however, only at the apex, as indicated by the lines front and back.

In the majority of lungs the adhesions are more or less distributed over the surface of the lung, but not usually in the form of complete adhesions which obliterate the pleural cavity. A patch of adhesions will be found here, a free area there.

Sarfert makes the positive statement that autopsies have proven that adhesions and pleural thickening always occurs in chronic cases, at least down to the third rib. Sonnenberg has agreed with this finding. The two apices which I have just presented, the one with a stretched band and the other a very limited area of adhesions, and both in very chronic cases with cavity formation, are merely illustrations of a number of such findings in my experience, and will serve to show that we can rely no more on the possible presence of adhesions than upon signs for the determination of their absence or their distribution.

In seeking to ascertain the value of history and physical examination in determining which cases would be suitable for nitrogen injection this portion of the history records was also reviewed. Only 14.5 per cent. of the cases gave a history of ever having had pleurisy, and in some of these the attack had occurred years before the existing tubercular disease of the lung. Physical examination revealed pleuritic friction sounds in 30 per cent. of the cases. The proportion of cases that do actually suffer from pleuritic adhesions is so high and completely obliterating adhesions have so often been found on autopsy in lungs that gave neither history nor physical evidence of pleurisy during life, that neither element in the examination can be accepted as possessing the slightest value.

Certain selected cases of pulmonary tuberculosis may be rationally treated by nitrogen compression, yet it must be stated, 1, that incipient and apex cases of tuberculosis do not require such treatment; 2, that pleuritic adhesions may entirely obliterate the pleural cavity; 3, that irregularly distributed adhesions may render collapse imperfect and inefficient; 4, that physical examination and the history of pleurisy can not be relied upon in determining the applicability of the method; 5, that autopsy findings demonstrate conclusively that pleuritic adhesions are not coextensive with the tubercular process; 6, that autopsy findings do not establish more than a probability of finding adhesions over a lesion of a certain degree.

The following conclusions have been reached from the present study as having particular bearing on this subject:

1. One lung which had been compressed and totally retracted in a hydropneumothorax for a long time has been studied in its gross and microscopic detail and bears out the anatomic statements of Lemke. It shows

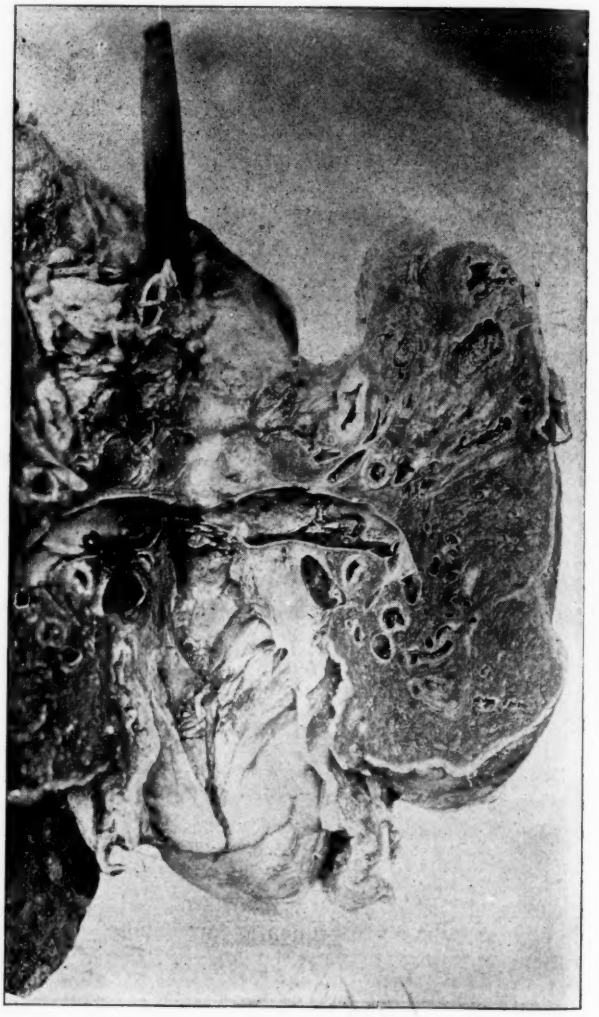

Fig. 9.—Tubercular lung. Same lung as seen in Fig. 8. Shows fibroid change, healed tuberculosis, contracting cavities.

fibroid change, no secretions, contracting cavities and a quiescent tubercular process (Figs. 8 and 9).

2. A second lung of a similar history and appearance was treated by injecting Kaiserling solution into the trachea. The entirely collapsed lung promptly dilated to the size of a normal healthy lung, despite the fact that it had been collapsed for a long time and that the pleura was greatly thickened.

3. A third case of pneumothorax has furnished Fig. 4. The lung has collapsed and old adhesions at the apex had been so strongly pulled on by the collapsing force that they had been stretched to a length of 5 c.m. Similar stretching might be rationally expected after nitrogen injection.

4. A large percentage of cases have no pleural cavity into which nitrogen gas could be injected.

5. The extent and degree of pleuritic adhesions is extremely variable, is not uniformly present under given pathologic conditions and is rarely coextensive with the tubercular involvement of the lung (Fig. 7).

6. Neither the history of pleurisy nor the physical examination possess the slightest value in determining the presence or absence of pleurisy. In the 978 cases reviewed, only 14.5 per cent. gave a history of pleurisy, and in 30 per cent. pleurisy was diagnosed by physical examination. In every case of autopsy pleuritic adhesions were present and in a high percentage of these cases such did not appear in the history or physical examination.

7. Apex and incipient cases of tuberculosis do not require such treatment by compression.

8. The table presented would show that only about 4 per cent. of all cases would be typical candidates for this form of treatment. The method may be employed, however, in double-sided tuberculosis.

THORACOPLASTY.

The unyielding character of the bony casement of the lung has long been looked on as a potent factor in impeding the healing of cavities. Quincke called attention to the uselessness of making a simple incision into an apex cavity after removing 2 to 6 c.m. of the first rib, and proposed first drainage from the most dependent part of the cavity, then an extra-pleural operation of thoracoplasty. It was proposed to remove the greater part of a great number of ribs over the diseased section of the lung, thus enabling the chest wall to fall in on the lung and the cavities to cicatrize. Turban has performed such an operation on a 21-year-old boy, and this patient was still in good health two and one-half years after the operation. Tubercle bacilli have always been present, however, in the sputum, and the tuberculosis certainly can not be said to be cured. Spengler has operated in a similar manner and reported healing. Franke reported improvement after such an operation, but a sinus persisted and tuberculosis was found after death from an intercurrent disease.

This method of treatment would seem to be based on precisely the same sound principles as the nitrogen method of Murphy, but is, of course, a very extensive operative procedure. It would, therefore, be irrational to use this method when the safe method of nitrogen-gas compression is available, but it seems to me that in those cases of one-sided pulmonary tuberculosis to which the nitrogen compression is impossible of application, this would be a rational method of treatment when climatic and dietetic measures have failed to arrest the progress of the disease.

The arguments to be advanced against such an operation are:

1. The severity of this operative procedure which to be efficient must remove large sections of a number of ribs. This fact alone will prevent a general use of the method.

2. It will always be done in patients much reduced in vitality. Among the 978 patients whose histories were consulted, 82.6 per cent. presented marked emaciation, 14.6 per cent. slight emaciation and 2.8 per cent. no emaciation. This will give a high mortality in the cases operated on and cause us to withhold operative treatment in a high percentage.

3. Animal experiments which I have conducted in dogs have demonstrated that while such extensive resection of ribs enables the chest wall to fall in satisfactorily, it does not secure the complete rest to the lung that will be given by the nitrogen method. In these dogs the chest wall on the side of resection moved in and out with a considerable excursion and the lung certainly filled to a limited extent with each inspiratory act.

4. Climatic treatment renders a fair percentage of cures among the class of cases that would be considered suitable for this operation.

5. The table presented for the demonstration of the distribution of the lesion shows only 2.6 per cent. of all cases to be confined to one side alone, and 1 per cent. in which one entire side and the opposite apex were involved. The percentage of cases primarily candidates for this operation will therefore be exceedingly small, and this small percentage will be still further lessened by considerations already given.

SUMMARY.

The points to which it has been my desire to call attention are:

1. The excision of pulmonary tubercular disease.
2. The drainage of tubercular cavities.
3. The nitrogen compression method of Murphy.

Fig. 10.—Healed tubercular focus at the apex (*a*). A counterpart of the case of Tuffier which was successful.

4. The treatment of tuberculosis by extensive thoracoplasty.

The conclusions that will be drawn from the paper are:

1. The excision of the pulmonary lesion is, in the vast majority of cases, both impossible and irrational.

2. The incision and drainage of tuberculous cavities in the lung does not seem to be a justifiable operation.

3. The nitrogen compression method of Murphy is a rational procedure in a limited number of selected cases, its application is safe, the effect on the tubercular lung seems favorable and the reported results are encouraging.

4. Thoracoplasty, while based on the same sound principles that give value to the nitrogen method, is an extensive operative procedure involving great risk to life, and furnishes slight promise of improving the percentage of cures obtained by climatic treatment.

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DISCUSSION

ON THE PAPERS OF DRS. WILLARD, M'RAE AND WHITACRE.

DR. OLIVER C. SMITH, Hartford, Conn.—I have operated on and published the results of three cases of pulmonary abscess, two of which followed pneumonia, the third followed buccal abscess and was exceedingly severe. The highly infectious pus found its way into the lung tissue by inspiration. The patient grew rapidly worse, was harassed by violent and prolonged paroxysms of coughing accompanied by profuse, offensive and purulent expectoration. I believe this character of cough is highly diagnostic of pulmonary abscess. The patient ran a very high temperature, becoming more and more aseptic and exhausted. It became apparent that he could not live unless a radical procedure was resorted to. Chloroform was administered, two ribs resected and the lung explored. The pulmonary and costal layers of pleura were adherent. The index finger was introduced deeply into the lung; the abscess cavity discovered. A small amount of pus only appeared at the time, but profuse drainage immediately ensued. The patient bore the operation well, and although the temperature ran a septic course several days, he eventually made a complete recovery. I believe the operation of pneumotomy for pulmonary abscess is a life-saving performance and one that has been neglected. The general practitioner frequently fails to make an early diagnosis and valuable time is lost. As to operating on tubercular cavities it is doubtless correct that the field is a very limited one.

DR. W. J. MAYO, Rochester, Minn.—In reference to securing suitable space to work in, I think we should resect portions of at least two ribs, and if on opening the abscess cavity the drainage is not free, resect still more, as proper drainage is the most important element. In reference to adhesions, it has been our experience that frequently none exist, and the lung looks comparatively healthy at the point at which the pleura is exposed. To secure adhesions we have found the most suitable way was to pack wet pieces of gauze directly onto the parietal pleura and lung, tying them down loosely with catgut sutures. In this way you secure a window through which the lung can be opened at once, if necessary. By these pieces of gauze the lung will be held closely to the desired point. In reference to the cavities one will frequently put a finger in and find bands running across the cavity, which one should be very cautious about breaking. They are the remains of bronchi and sometimes contain a blood vessel. I once broke one and had a tremendous hemorrhage, which was finally controlled by forceps and gauze packing.

DR. RICHARD H. GIBBONS, Scranton, Pa.—The experiments on animals are very different from the experience we get in traumatic injury of the lung, of which we have many cases in the anthracite coal regions involving the lung structure. We do not get the sudden deaths as often as the experiments on animals would suggest. I have seen many cases in the mining regions where the lung was perforated, but immediate death did not take place, and I have seen them where they would get general emphysema after which the symptoms would subside, although pneumonia or infection might often in the end result in death. If we open up the chest thoroughly we do not run as much risk as in making a small opening. I have taken coal from the pleural cavity and the lung repeatedly. I will not say that my patients all got well, but I will report a case which shows that perforation of the lung is not necessarily followed by death. In this case I did a very large resection of the ribs and attempted Estlander's operation. The cavity was an old one within the pleura, and the late Dr. DeCosta, who had seen the case with me, recommended non-interference. The late Dr. Pepper and Dr. Deaver also saw the case, and they recommended that I should pursue the course that I had proposed. With Deaver's assistance I operated and the man did well. The cavity, at first large, became narrow and very tortuous. I intrusted the packing to one of my assistants. He cut the gauze off squarely—gauze for packing should be torn lengthwise—as he opened the package, and one day after packing the wound he sent for me hurriedly owing to the patient having been seized by marked symptoms of suffocation. The symptoms suggested perforation of the lung, caused by forcing the packing outside of the tract and into the lung tissue, the first stage of so-called lobular pneumonia being established and recognized when I arrived. This patient afterward developed violent coughing spells and repeatedly *expectorated* large fragments of the gauze used in packing during these choking spells. One of the pieces of gauze coughed up was seven inches in length. The gauze being so thoroughly prepared was the only thing that saved the man's life and he has remained perfectly well, now seven years afterward.

DR. DUDLEY P. ALLEN, Cleveland—In reaching the lung when there are no adhesions holding it to the chest wall I have found great aid in bringing the patient to the edge of the table and rolling him over so that the opening in the chest wall is at the most dependent point. With a patient in this position the weight of the tissues in the thorax by gravity tends to draw them toward the side which has been opened. This position greatly facilitates respiration, whereas if the patient lies with the operated side upward the weight of the pulmonary tissues tend toward the unaffected side increasing the difficulty of respiration. When the patient is turned as has been said, with the operated side in a dependent position, the weight of the pulmonary tissues brings the lung against the finger, and it is much more easy to palpate an extensive portion of the lung than it is in any other position. I mention this maneuver in connection with this discussion since anything which facilitates operations upon the lung is of value, recognizing the operation as we do as among those which are beset with considerable difficulty and danger.

DR. D. W. CROUSE, Waterloo, Iowa—I have an engineer under my care who had a two-inch square scantling run into his chest and passing out through the back. The case was not under my care for weeks, and for many days came very near dying. The scantling was pulled out, and a nail, which was in the scantling, tore the parts very badly. It is nearly a year since he was hurt, and I would like to know how to close the sinus that remains. The opening was clear through the body,

and by using an injection in the wound in front I can still get a few drops of fluid out of the back. The bronchi seem to be still open, as the man can tell the nature of the wash I am using. The tube I employ is probably from one and one-half to two inches long, and, as there is still some discharge, we keep this tube in in order to keep it open. This case is not exactly germane to the subject of the paper, except in so far as it shows a very serious injury to the lung and the patient recovering from the same.

DR. A. H. FERGUSON, Chicago—Allow me to report a case of tubercular consolidation of a portion of the right lung successfully treated with iodoform introduced into the substance of the lung. It was in a young colored school teacher who presented himself at the Post-Graduate Hospital three years ago complaining of a large fluctuating abscess situated beneath his right pectoralis major muscle. On laying it open and thoroughly removing all diseased tissue with knife and scissors, the third and fourth ribs were found to be involved superficially to the extent of about an inch. Two weeks later consolidation of the middle lobe of the right lung was detected which had recently developed. He had pain, fever and rapid respiration. It was thought to be an abscess. On removing a section of the second and third ribs and passing my finger through the incised pleura above the consolidation, I could feel the upper portion of the lung to be apparently normal and found that the consolidation extended clear across the whole lung, making a complete diaphragm in the chest wall. The exploratory incision in the pleura was now closed and the consolidated area attacked through a lower incision which I extended down to the lung exposing a couple of inches of the solid mass. A large trocar and cannula was carefully inserted into it to the extent of about four inches, but no pus was found. A section of the lung tissue was then removed for microscopic examination, and a dram of iodoform left in the deeper recesses of the explored lung. Professor Klebs declared the specimen to be tubercular pneumonitis. The case then was treated as follows: Through a large cannula introduced with a trocar, a dram of iodoform was deposited into different parts of the consolidated mass twice a week for three months, at the end of which time all consolidation was gone and vesicular murmur returned into that portion of the lung that had been diseased. A late report finds that the case is apparently cured.

DR. J. C. OLIVER, Cincinnati—Dr. Whitacre's paper is certainly a very important and timely one because it supplies the final link in the chain of reasoning in regard to the surgery of the lung. It is particularly important because of the light it throws on tuberculous affections of these organs. This paper shows that it is possible to do a certain amount of surgery on the lung. In other words, there can be no doubt that from a purely surgical standpoint intervention is a feasible surgical possibility. But, basing his report on nearly a thousand cases of tuberculosis of the lung in which post-mortem examinations were made, he comes to the conclusion that the proportion in which surgery could be of any possible benefit to the patient is extremely small, less than one per cent.

From these observations and statistics one may logically arrive at the conclusion that while surgical procedures are possible, they are not wise because of the very small proportion of cases in which any benefit can accrue to the patient. It seems demonstrated, therefore, that the surgery of pulmonary tuberculosis will be limited to a very small field and that the present attempts to invade these organs will not be capable of establishing these procedures on a sound surgical basis.

DR. JACOB FRANK, Chicago—I remember one case that did not get well where there were present periodical spells of coughing pus. I decided I would operate on the child just before coughing up one of these masses of pus, and accordingly the ribs were resected, but just as I was about to enter the pleura the child, by a vomit-cough effort, expelled the pus. Immediately the dulness on percussion disappeared. Thrusting the needle in every direction twenty or thirty times, failed to get any pus whatever. Later I became bolder and used my finger, but found no pus. It will not always be as easy to operate on the lung containing pus where the cavity is not rigid and firm, and I can see how easy it would be to go into the lung and open up such a case without finding it. The abscess cavity in the lung collapsed is quite a different proposition for the surgeon from one where the cavity is always full or partially full of pus and the walls through adhesions are well fixed and firm. It is just this latter form of abscesses that become a very simple procedure to open and evacuate, and I dare say most of the successful cases published are of this kind.

DR. MCRAE, in closing—In collecting these cases I purposely excluded not only the tubercular and localized pleurisy cases, but also gangrene and septic pneumonias, only including abscess following lobar pneumonia. The remarks of Drs. Mayo and Frank are very important. I observe Dr. Frank did not establish adhesions first. Personally, I have been very much interested in studying these cases. Dr. Frank made a good point in emphasizing the difficulty of locating abscess cavities where there are no adhesions of pleuræ.

DR. WHITACRE, in closing—I would like to mention two points in connection with the paper on abscess of the lung. I believe that it is now becoming a well-recognized fact that a high percentage of cases of empyema have their origin in a small abscess of the lung which is located just beneath the pleura. These abscesses break through into the pleural cavity, produce an empyema and the case is so classed without reference to the primary seat of the suppurative focus. I have in the Pathologic Exhibit a specimen which shows such an abscess beautifully. I have seen two cases of empyema in which a bronchial fistula was present immediately after operation for the relief of the pleural collection and in which abscess of the lung undoubtedly preceded the empyema. The second point I wish to make is that cases of abscess of the lung recover under medical treatment and that surgical procedure should not be instituted until it is clearly demonstrated by many weeks of treatment that no progress is being made. During the past winter I have had two cases of abscess of the lung, each with one pint capacity, which I hoped to be able to operate on, but they both recovered perfectly without operation.

The case of tuberculosis, which Dr. Ferguson has referred to in his discussion of my paper, has interested me very much in the review of the literature on this subject. I am impressed, however, that this favorable result was a very happy chance, and that it should not be taken as an argument in favor of operating on tubercular lungs. I have referred to a specimen in my collection, which is to be found in the Pathologic Exhibit, in which there was, as nearly as it is possible to determine by physical examination, a circumscribed mass of tuberculosis of the same nature and in precisely the same location. On autopsy this mass was found, as located by physical examination, and all other parts of the lung were found to be entirely free from tubercular deposit except for one mass the size of an English walnut, which was found in the base of the lung at a point most remote from the chest wall and entirely beyond the possibility of detection by physical examination. Operation on what appeared to be the sole focus would have been useless.

Tuffier's case is frequently referred to as a successful case of excision. The complete report of the case is not made, however, and it is not always stated that this was a healed tuberculosis, that microscopic examination revealed only individual lung tissue. I do not believe that this case has any right to consideration as a successful one.

While it has now been definitely established that adhesions are not indispensable to operative attack on the lung, I have included this point in my investigation of case reports. I find, as was stated in the paper, that adhesions are by no means co-extensive with the tubercular process, and that neither our pathologic knowledge nor our present methods of physical examination will render information of value in determining either their presence or absence.

Removing Picric Acid Stains.—Brynk, in *Bull. Phar.*, recommends rubbing the skin or fabric with a solution of 10 parts of sodium benzoate and 40 parts of boric acid in 1000 parts of water.

THE DIAGNOSTIC IMPORTANCE OF KERATITIS PUNCTATA INTERNA (DESCEMETITIS).*

HARRY FRIEDENWALD, A.B., M.D.
BALTIMORE.

The term keratitis punctata is applied to several very different conditions. We must distinguish between the true punctate inflammations, the keratitis punctata profunda, the keratitis punctata superficialis, etc., and that form which consists of deposits on the inner surface of the cornea. If we retain the term for this form we should define it as "keratitis punctata interna." This condition is also known by the name of descemetitis, and, while there are objections to this term, it is less liable to produce confusion, and for this reason and for the sake of brevity we shall use it in this paper.

In a paper published in the Archives of Ophthalmology[1] six years ago, I brought evidence to show that descemetitis occurs in every case of iritis. I divided the descemetitis into two forms—the coarse, which can be seen with the naked eye, and the fine, which is detected by means of strong convex lenses behind the ophthalmoscope. The former is occasional, the latter constant. It is the coarse variety only to which most writers refer under the term of descemetitis.

Concerning the position which these deposits take, little need be said. The coarser opacities are found chiefly or entirely in the lower half of the cornea, frequently arranged in the well-known triangular form. In rare cases the entire inner surface is covered. The fine opacities are also most abundant in the lower half, but frequently cover the upper half as well. Exceptional cases occur in which the spots cover an area more or less central. The largest spots rarely exceed one mm. in diameter and are usually round. In very rare cases they assume irregular forms and become much larger. In a case of tubercular iritis which recently came under my observation, they were so large and so much resembled the miliary tubercles on the surface of the iris that I assumed that they were likewise of a tubercular nature.

In order to learn the facts as to the occurrence of descemetitis in various diseases of the eye, I have carefully reviewed my case—histories both hospital and private for the past twelve years. This paper is a summary of these cases, together with the conclusions to which they lead. Assuming that my statement that descemetitis occurs in every case of iritis is accepted by all who have given this subject any study, I shall refrain from citing in this paper several hundred cases in which this condition depended upon iritis. I may add that observations since the publication of my former paper have corroborated the views then expressed. I have also omitted all cases of diffuse keratitis. At the same time I desire to state that I have never found descemetitis absent during the active period of this disease. Finally, before taking up the individual cases and conditions, I desire to state that the following notes are taken from my histories, many of which are unsatisfactory because incomplete, or because of the failure of patients to return.

A. CASES OF DESCEMETITIS WITHOUT OTHER DISEASE.

CASE 1.—Mr. G., aged 30, was seen July 3, 1900. The sight of the left eye was blurred and the eye had been painful for two weeks. The pupil responded promptly to atropia. There was marked descemetitis. Atropin was ordered. Two days later there was no evidence of iritis, and the fundus appeared normal.

CASE 2.—Miss R., white, aged 29, complained of her eye for ten days. There was descemetitis without any evidence of incipient iritis. No note of fundus. Patient seen once.

CASE 3.—Mr. M. C. G. complained of the sight of bad vision in the left eye for one week. The pupil dilated freely under atropia. There was marked descemetitis occupying a small portion of the cornea just below the center. The image of the fundus was blurred, but appeared normal. Patient was seen but once.

In none of these cases were there notes of other evidences of uveitis. It is to be mentioned that in none is there a note as to the presence or absence of vitreous opacities. All of these cases were dispensary patients and seen only once or twice.

We may here add two cases in which the opacity of the cornea was so great as to prevent examination with the ophthalmoscope.

CASE 4.—Mrs. H., aged 29; she had had recurrent inflammation of the right eye since childhood. The last attack began one week before she was seen by me. There was a diffuse opacity covering the lower half of the cornea (old diffuse keratitis?) with a few fine calcareous deposits, and distinct descemetitis. The iris was normal. Diagnosis: Old uveitis with recurrence.

CASE 5.—Mr. R. E. C., aged 38, has been under treatment since May 20, 1902. There was dimness of vision for three weeks before he came under treatment. At first there was pain, but this had disappeared. There was extensive descemetitis covering the entire cornea. The pupil dilates without any synechiæ. There is sensitiveness to pressure in the upper inner portion over the ciliary body. No ophthalmoscopic reflex. Fingers are seen at four feet. He denies lues; the urine is normal. In this case the descemetitis is of a peculiar form. Besides the many coarse and fine opacities usually seen, there are deposits arranged somewhat in the form of a circle around the central part. These deposits are very large and irregular and are confluent. (See Fig. 2.) It is probable that there is extensive uveitis, but the opacity at present prevents examination of the fundus.

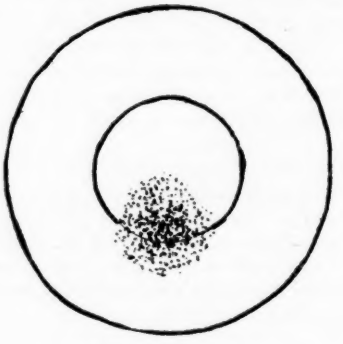

Fig. 1.—Case 3.

B. DESCEMETITIS WITH CYCLITIS.

CASE 6.—Mrs. B., aged 31, was seen Dec. 22, 1897, complaining of a mist before the left eye for several days. The pupil dilated ad maximum under a mydriatic; the vitreous was clear, the fundus normal, but there was extensive descemetitis. Under iodid of potash the condition gradually improved, and in the following May the cornea was almost clear. In September, 1898, a few small permanent opacities resulting from the descemetitis were found. But in October she returned with descemetitis in both eyes and distinct synechiæ. At no time was there any pain. Iodid of potash was again ordered and atropia used and the condition rapidly improved.

CASE 7.—Mr. C., aged 49, was seen June 19, 1900. Six months previously he had had severe iritis in the right eye and an iridectomy had been done. He now complains of pain in the left eye. There are no synechiæ, but a coarse descemeti-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

1. Vol. xxv, 1896, p. 191.

tis covers the lower half of the cornea. There is no note of the fundus and the patient was not seen again.

In the last case but one (Case 6) we found descemetitis in the left eye without other evidence, at the time, of uveitis; ten months later there was recurrence in both eyes with distinct though slight iritis. There is little doubt but that the chief trouble here was cyclitis with slight involvement of the iris during the second attack. In Case 7 the patient had recently passed through a severe iritis in one eye before the other eye became affected with the descemetitis but without synechiæ. The diagnosis of cyclitis is most probably correct.

CASE 8.—Mr. G., aged 28, applied for treatment Jan. 8, 1891; he had had great pain in the left eye for one week. The examination showed that the pupil was responsive to light; there were no synechiæ. The color of the iris was somewhat darker than in the other eye; a few blood vessels could be seen on its surface. The circumcorneal congestion was marked, but the ciliary sensitiveness was not great. The cornea was studded with the finest deposits on Descemet's membrane. Atropia was instilled, and on the following day a second careful examination showed the same corneal deposits and likewise striæ in the cornea. The striæ persisted for a number of days during the intense stage of the inflammation; toward the end of January the cornea became clearer, the congestion of the eyeball diminished. February 4 the eyeball

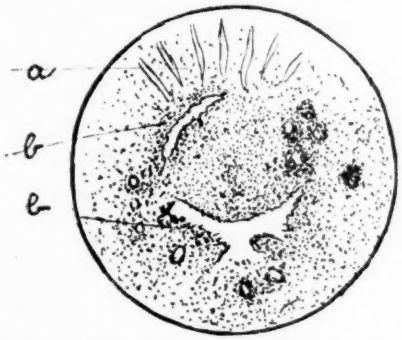

Fig. 2.—Case 5. *a*, Striate keratitis; *b*, large confluent deposits.

was almost white, but the corneal deposits, though fine, were still to be found and there were likewise some fine deposits on the anterior capsule of the lens. The condition then rapidly improved; synechiæ did not develop in this case and the affection of the iris was very slight in comparison with the severity of the symptoms. The diagnosis was acute cyclitis with slight involvement of the iris.

CASE 9.—Mrs. F., a myope, was seen frequently from Aug. 7 to Oct. 7, 1897. The patient had complained for two weeks before she was first seen. The eyeball was at first congested. There was little pain. There was typical gross descemetitis, triangular in shape in the right eye. The media were too cloudy to permit of ophthalmoscopic examination. There was one small synechia. The condition gradually became clearer and finally but a few brown deposits were found on the cornea. The patient was seen two years later, the fundus found normal and the media clear. In this case there was without doubt intense cyclitis, with slight involvement of the iris.

CASE 10.—George H., aged 25, was seen early in August, 1896, complaining that his eye had been cloudy for four days. There was peculiar descemetitis, almost circular, which did not reach the lower limbus (Fig. 3). There were no changes in the fundus nor in the iris. The patient was seen frequently and carefully examined. When after four weeks the corneal opacity had cleared up (leaving a little spot of permanent opacity in its center), fine dust-like opacities were found in enormous quantities in the anterior portion of the vitreous, and there was one larger opacity. Diagnosis: cyclitis.

In this case there was at no time any pain. The eyeball became but slightly congested. The extent of the descemetitis became somewhat enlarged after it was first seen, but it never lost the round shape. The presence of the vitreous opacities proves that the deeper uveal structures were involved.

CASE 11.—Miss F., aged 39, with excessive myopia, choroidal atrophy and poor vision (—15 Ds. 6/60), was operated on the left eye in October, 1900, for the relief of the myopia. Discission was performed twice and in December the lens substance was removed through a linear incision. Her vision improved so much that in October, 1901, she came for operation on the right eye. In this eye the removal of the clear lens, without iridectomy, was performed Oct. 22, 1901. Barring slight incarceration of the iris, and one synechia, there was excellent recovery, but some cortical matter was left. This rapidly absorbed and excellent vision was obtained through a central opening. On December 11 the patient was again seen. The eyeball had been somewhat congested and the cornea was studded with a number of large spots. Atropia was ordered. In two weeks the eye was much clearer and on February 14, when the patient was again seen, no fundus change could be found, the cornea and other media were clear, and vision after correcting the astigmatism was almost 6/12.

The appearance of the descemetitis in this case almost two months after the operation, when the pupil was sufficiently clear to allow of ophthalmoscopic examination, makes the diagnosis of cyclitis probable. This was without doubt due to incarceration of the iris and the presence of old iritic synechiæ.

CASE 12.—Mr. T., aged 27, was seen June 24, 1893. Both

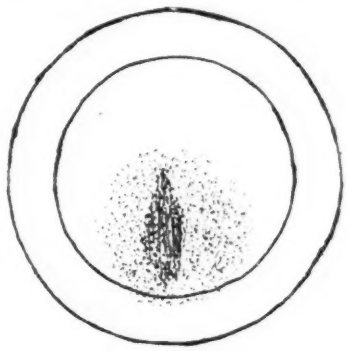

Fig. 3.—Case 10.

eyes were very myopic. The sight of the left eye had become very much reduced (2/200), and the field was much limited. The left cornea was studded with large and fine deposits and the vitreous filled with fine and coarse opacities. The corneal opacities rapidly disappeared, but the vitreous opacities lasted for a long time. The fundus was then found normal.

CASE 13.—Frank R., aged 28, was seen once in January, 1894. He had been suffering with impaired vision in the right eye for two years; during the past year there had been great improvement while under the treatment of another physician. No cause could be assigned. Vision is now almost 5/7, but the cornea contained scattered deposits and the vitreous numerous opacities. The iris was normal and no fundus change could be found. There was marked asthenopia in near work.

CASE 14.—Wm. B., aged 23, was seen Sept. 5, 1894. The patient had suffered from chronic rheumatism. The right eye had been struck nine years previously and was frequently painful since that time. There was great asthenopia and spasm of the accommodation. On September 13 slight hazy spots were found in the right lens and a few opacities in the vitreous. The patient was seen often and there was apparently frequent change in the refraction. Dec. 14, 1896, he appeared with numerous deposits on Descemet's membrane. February, 1897, the eye became painful, the vitreous showed many opacities and there were some fine mottled opacities in the cornea. The condition increased at first, then cleared up, and in June the cornea was again almost transparent. But at this time the right eye began as the left had in February, and went through the same changes. In March, 1898, there were extensive deposits on Descemet's membrane in both eyes as well as

vitreous opacities. The condition gradually improved. No fundus changes were observed.

CASE 15.—Miss M. A. B., aged 26, was seen Nov. 9, 1891. The lower half of the cornea was studded with fine descemetitis. The pupil dilated *ad maximum* under atropia and there was no evidence of iritis. Even with the dilated pupil, only a dull reflex could be obtained in all directions, but no distinct image. There were large vitreous opacities. The patient stated that the condition had been worse, but was now improving. Fingers were counted at five feet. Patient was not seen subsequently.

CASE 16.—Miss D., aged 33, was first seen April 9, 1901. She complained of blurred vision in the right eye for the past three months and had long suffered from severe headaches. There was marked descemetitis, and the vitreous was filled with fine and coarse opacities. V-20/200. There was no sign of iritis, and careful examinations of the fundus (then and since) have failed to reveal anything abnormal. The visual field was perfect. She was examined for disease of the heart, kidneys and blood, with negative result. There was no evidence of lues. She was given red iodid of mercury alternating with iodid of potassium.

The patient has been seen frequently. This condition has fluctuated, but has not at any time disappeared. At the last examination on May 14, 1902, V-20/100. The right cornea is still studded with fine deposits. The lens is clear. The vitreous contains fine and coarse opacities. The fundus is normal and the field of vision for white and red is perfect. The left eye has not at any time shown any evidence of disease. Diagnosis: chronic cyclitis.

In the last series of cases there was sufficient evidence in the extensive vitreous opacities of deep uveitis, but as the fundus showed no abnormalities and the iris was unaffected, we place the lesion in the ciliary portion. The three cases that follow give still further evidence of uveitis in the development of cataract in young and otherwise healthy persons.

C. DESCEMETITIS WITH DEVELOPMENT OF CATARACT IN YOUNG PERSONS.

CASE 17.—Mrs. N., aged 32, was first seen Jan. 23, 1898. She complained of having had "spots before her sight" for some time, and that in the past few weeks the condition had become much worse. In the right eye there were numerous dust-like, vitreous opacities, and the lens likewise contained similar opacities. The optic disc and retina appeared normal. In the left eye there was rapidly developing cataract, and the fundus could not be examined. Both corneæ were studded with fine and coarse deposits. Close examination did not reveal any choroidal lesions even in the periphery. Vision in the right eye was 6/8, 6/6 partly with plus 1.5 Ds; the left eye distinguished fingers at four feet. The field of vision of both eyes (for white and colors), was approximately normal. The patient was carefully examined and was found healthy in every respect (heart, blood and urine). She was given iodid of potash in small doses, and later the red iodid of mercury. In March of the same year the vitreous of the right eye had become clearer, but there was still descemetitis in both eyes. The cataract of the left eye had increased. The descemetitis was discerned as late as April. In August I could find no deposits on the corneæ and the right vitreous was almost perfectly clear. The opacities in the right lens had not made any advance. There was at no time pain or other active signs of inflammation. The patient left the city and was not seen until December, 1899. The cataract in the left eye in the meantime became sufficiently mature to permit of an operation, which was performed Jan. 1, 1900. A small iridectomy was made and an excellent result was obtained. The patient was last seen in April, 1902. The vision of the left eye is perfect and a careful examination of the fundus failed to reveal any changes. The condition of the right eye is practically unchanged.

CASE 18.—Miss F. D., aged 10, an apparently healthy and well-developed girl, was first seen Feb. 3, 1898. She had complained for a few days of blurred vision in the right eye. The right vitreous was filled with fine opacities. There was marked descemetitis. No choroidal lesion could be found. The left eye was perfectly normal. Vision was almost perfect. Toward the end of the month the cornea became clearer. The patient was seen frequently and on March 14, I observed a number of small opacities near the posterior surface of the lens. They gave the picture of minute bubbles. Vision remained about the same and the field of vision was perfect. The corneal opacities were observed from time to time as late as November, 1899, but in April, 1900, the cornea was perfectly clear. In the meantime the lenticular opacities had gradually increased and formed a more or less circumscribed cataract in the outer, upper portion of the posterior cortical layer. In October, 1901, there was a recurrence of marked descemetitis and the opacity of the lens had increased somewhat. She was last examined in November, 1901, and numerous deposits were still found on Descemet's membrane. The opacity of the lens had not increased and her vision is still good.

CASE 19.—Mrs. G., aged 27, was seen on May 1, 1902. She had been forced for the past few years to sew to an excessive amount and had found that the sight of the left eye had been failing. She was otherwise in good health, but had lost in weight, which was due, as she thought, to overwork and worry. The right eye was found to be perfectly normal (plus 1.75 V-6/5); left eye showed extensive descemetitis and opacities in the form of small globules throughout the posterior portion of the lens. The vitreous could not be examined, but a sufficiently clear picture of the fundus was obtained to determine that the optic disc was normal and that there were a few small, pale, pink and sharply circumscribed spots in the periphery of the choroid. The field of vision was slightly contracted.

The development of the cataract in these cases is the expression of marked nutritive disturbance and can only be ascribed to uveitis, for general constitutional disease was definitely excluded. On the other hand, there were in all the cases abundant opacities of the vitreous which likewise indicated uveitis.

D. DESCEMETITIS ASSOCIATED WITH GLAUCOMA.

CASE 20.—W. T., aged 42, was seen July 24, 1900. There was a deep glaucomatous excavation with atrophy of both papillæ. The left fundus appeared blurred because of enormous vitreous opacities and gross descemetitis arranged in triangular form. Vision, right eye, 10/200, left eye, perception of light eccentric.

CASE 21.—Mrs. F., aged 28, was seen April 10, 1902. Seven years before she had had trouble with the left eye, at first in the form of spots and after a time vision was entirely lost. The eye was never painful. She now suffered slight discomfort. T. plus ½ or 1. The pupil was not dilated. The cornea was studded with large deposits in the lower half, but the entire surface contained finer deposits. V=O. In order to exclude any malignant growth by ophthalmoscopic examination, a mydriatic was used in spite of the high tension. There was a cataractous opacity in the central posterior portion, but with the dilated pupil a dim image of the disc was seen. By parallactic movements the excavation was distinctly made out. No other fundus changes could be made out, but there were abundant vitreous opacities. The right eye was perfectly normal.

In the last two cases the evidence of uveitis are vitreous opacities, glaucoma and in the one cataract. The ophthalmoscopic image was not sufficiently distinct to exclude choroiditis with certainty.

E. DECEMETITIS WITH ACUTE CIRCUMSCRIBED EXUDATIVE CHOROIDITIS.

I have next to report that descemetitis was observed in 31 cases of fresh exudative choroiditis. These cases will not be detailed individually on this occasion. I shall reserve their publication for a separate paper, partly because it would require too much time, but especially because I am desirious of calling attention to many other points of interest in these cases besides descemetitis. This disease, which is observed between the ages of 17 and 50, the average age being 27¼, is

characterized by the appearance of white or bluish white circumscribed effusions near the optic disc or the macula, but very frequently in the extreme periphery of the fundus. The size of the effusion may be less than that of the disc or it may be six or eight times as large. The symptoms so far as vision is concerned consist most frequently in the appearance of muscæ with a blurring of central vision, which may be slight or marked, and result in complete loss of central vision when the effusion is in the foveal region. There is rarely any pain. I have examined in all 38 cases of this affection which were more or less recent and, as above stated, 31 showed descemetitis. In four, the patient was seen too late and the deposits had probably disappeared. In one the pupil was too small to make a careful examination, and in only two was there no explanation for their absence. Vitreous opacities were never absent. In many of these cases the corneal deposits disappeared within a few weeks, but the vitreous opacities lasted for a long time. The effusion gradually disappears and leaves an area of atrophy and irregular pigmentation. The disease shows marked tendency to recurrence.

I should like to say a word here as to how these effusions are to be found; the examination of the field of vision is an excellent guide, and has helped me in a number of cases. But I rely chiefly upon watching the ophthalmoscopic reflex in different portions of the fundus and examining with the indirect image whenever a whitish reflex appears.

F. DESCEMETITIS IN SYPHILITIC CHOROIDITIS.

CASE 22.—Mr. H. was seen March 4, 1902. The patient had had luetic infection nineteen months before, followed by mucous patches, but without any skin eruption. An iritis in the left eye soon followed. This was rapidly cured. Eight months ago he noticed a scintillation before the left eye and vision dropped slightly. This scintillation has continued ever since and is very annoying. He does not complain of his right eye. In the left eye there are dense vitreous opacities, but the papilla can be made out with a little difficulty; the cornea is studded with descemetitis; there are numerous brown spots on the lens, traces of old iritis. The upper lid droops slightly. In the right eye the fundus appears normal, there are some vitreous opacities and fine descemetitis. Vision of the left eye scarcely 3/45. In the right 6/18. The patient was put on mercurial inunctions and jaborandi. He was last seen May 1. Vision had improved; right eye, 6/15, —0.75 Ds 6/9 almost; left eye 6/30, —0.5 Ds 6/15 partly. The fundus had cleared sufficiently to show a few light pinkish choroidal spots, typical of syphilitic choroiditis.

In this connection I desire to state that in another case under observation at the same time, in which but one eye was involved and the condition never became as bad as in that just described, no corneal deposits were observed.

I wish next to refer briefly to a few cases in which the chief disease appeared to be extra- and not intra-ocular. At the beginning of this paper I referred to diffuse keratitis. I have observed descemetitis twice in cases of circumscribed keratitis.

G. DESCEMETITIS ASSOCIATED WITH CIRCUMSCRIBED INTERSTITIAL KERATITIS.

CASE 23.—Mr. O., aged 25, was seen in April, 1896. There was circumscribed keratitis which at first appeared to be incipient diffuse keratitis, but which did not take this course. There was marked descemetitis. There are no notes as to the fundus.

CASE 24.—Mr. E., aged about 30, who was first seen Feb. 15, 1902, complaining of the left eye. He ascribed his trouble to having had a little hot wax fly into the eye, after which the eye had remained red for some time. There was no constitutional disease and lues was denied. When first seen there was slight injection of the eyeball just below the cornea, a small area of sclerotizing keratitis, fine descemetitis and the fundus was normal. He was seen again March 21, the fundus was normal and there were no signs of iritis; a few fine blood vessels had penetrated into the sclerotizing region, and there was still descemetitis. The patient had been seen in consultation with his family physician, who reported on May 1 that the eye had become perfectly normal.

H. DESCEMETITIS ASSOCIATED WITH SCLERITIS.

A second extra-ocular condition with which I have found descemetitis associated is scleritis.

CASE 25.—Thomas K., aged 27, had lues for two months, when he was attacked with severe scleritis. The fundus was perfectly normal. A week later there was fine descemetitis with numerous larger deposits. Two weeks after this the scleritis had disappeared (under specific treatment) and the cornea was much clearer.

CASE 26.—Mrs. B., aged about 35, had double retrobulbar optic neuritis in April, 1896, from which she recovered with very good vision. In January, 1899, she returned with inflammation of both eyes, which had made its appearance almost immediately after having exposed herself to the cold while menstruating (without any additional covering she hung out her wash on a very cold day). There was well-marked scleritis in both eyes. I left the city soon afterward and did not see her again till June, 1901. She had had the scleritis for a long time, but was now free. At this time there was marked descemetitis, especially in the right eye, without fundus changes.

In neither of the two cases just cited is there any note of uveitis. Scleritis frequently results in uveal involvement, and I am inclined to believe that there was secondary involvement of uveal tract in both of these cases. I have found iritis and old synechiæ in several of my cases of scleritis.

CONDITIONS IN WHICH DESCEMETITIS IS ABSENT.

I have not found descemetitis in any cases of disseminated choroiditis, central choroiditis, senile choroiditis, myopic choroiditis, and, as mentioned above, it was absent in one case of syphilitic choroiditis in which it was carefully looked for, and in several others in my case books. It is absent in hemorrhages of the retina, choroid or vitreous, and I have never seen it in any case of retinitis excepting in syphilitic retinitis (but in this case there was also iritis).

SUMMARY.

Keratitis punctata interna, or descemetitis, is observed in various ocular diseases. It is found in every case of iritis. It is an almost constant sign of exudative choroiditis and is sometimes found in syphilitic choroiditis. It is also observed in cases of acute and of chronic cyclitis. It is found in diffuse and in circumscribed keratitis, in which cases it probably depends upon an underlying uveitis. It is sometimes seen in scleritis; and is then probably due to associated, perhaps secondary, uveitis. When no other signs of uveal disease are noted besides descemetitis, as in the first three cases of our series, it is due to carelessness in the examination.

Excluding the cases of external disease (diffuse and circumscribed keratitis and scleritis) and the great category of iritis, I have been able to report on 53 cases. Even including those earlier ones in which the examinations were not made with the thoroughness of those of later years and including those in which the opacities of the media prevented examination of the fundus, they show that about three-fifths have exudative choroiditis. This ratio is indeed high; I ascribe it to the fact that,

convinced for a number of years of the frequency of these cases, I have examined the fundus in many cases for a long time and repeatedly until I found the looked-for lesion. In some the diagnosis was not made until the second visit and after a mydriatic had been used, and in several of those seen in dispensary practice the lesion was not observed by any of those who examined the cases until it had been pointed out to them. Experience has taught me that a large number of these cases pass through the hands of skilled ophthalmologists without discovery of the true lesion. I do not hesitate to say that if my earlier cases had been examined more carefully exudative choroiditis would have appeared relatively still more frequent than has been shown in this paper. It is due to ignorance of these facts and to carelessness in examination that so many cases are still recorded as "serous iritis" and "serous cyclitis." It should be noted that we can examine with the ophthalmoscope only that part of the choroid lying back of the equator, and, at most, with a dilated pupil the equatorial region or a little beyond it.[2] Exudations in the anterior portion of the choroid may therefore be beyond the reach of the ophthalmoscopic examination. Such cases will be grouped with cyclitis.

Do the cases reported throw any light on the nature of the cyclitis with which descemetitis is associated? We know that descemetitis occurs in iritis, in which disease we always have an exudative inflammation. We find descemetitis in choroiditis only when there is exudative inflammation. It is but reasonable to infer on clinical grounds that descemetitis occurs in cyclitis only when there is exudative inflammation. The "serous iritis" and "serous cyclitis" have, therefore, no clinical bases. That they have no pathological basis has been pointed out recently by Bruns.[3] It is to be hoped that these terms will be discarded in the future, and our section would do well to express itself with decision to this effect. One point that I should especially like to impress by my paper is, that in a large proportion of cases ordinarily diagnosed as "serous iritis" and "serous cyclitis" we find exudative choroiditis.

INJURIES OF THE EYE PRODUCTIVE OF DISEASES OF THE UVEAL TRACT.*

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The accidents to which the eye is exposed are manifold. Notwithstanding its bony environment and its soft and resilient orbital cushion, the prominent and commanding position in the head affords a conspicuous target for flying missiles, and the insufficient protection afforded by the lids and lashes and the practically uninterrupted functional application of the eye during working hours materially contribute to its dangers. The fortunate provision of nature, the endowment of man with two eyes, saves us from blindness should disaster overtake one-half of the visual anatomy, but this very duality multiplies the danger, and, more than that, uncared traumatic inflammation of the one threatens the safety of the other eye.

Apparently insignificant injuries are sometimes followed by the most disastrous results. This ocular inconsistency between cause and effect is to be traced in every instance to either delayed or unwise treatment or to the state of the constitution of the individual at the time the injury is received.

It seems to me useless to spend the time allotted to the reading of this paper, or your time in listening to it, by consideration of the kinds of injuries, such as incisions, punctured wounds, concussion, foreign bodies, etc., or to dwell on the well-known exceedingly complicated anatomy of the uveal tract and the diseases induced by accidents. I prefer, therefore, to confine my remarks to a brief discussion of the constitutional complications and the early and late treatment of injuries of the eye causative of disease of the uveal tract.

The object of the treatment is two-fold, namely, the preservation of useful vision and, in cases in which this result is unobtainable, the saving of the eyeball.

A favorable prognosis depends in large measure, as I have intimated, on a constitution free from inherited or acquired taint and uncorrupted by devitalizing habits.

I wish to direct your attention to the pernicious influence on the course and termination of traumatic inflammation of syphilis, diabetes and tuberculosis. Any one of these affections will render the prognosis uncertain if not actually bad by intensifying the inflammation or changing its character, or developing a tendency to involve adjacent or remote organs.

SYPHILIS.

In syphilitic patients injuries to the eye are accompanied by exudation from the iris, ciliary body and choroid that destroys the transparency of the media and tends to alter the normal relation between secretion and excretion, and leads eventually to secondary degeneration. From the iris the exudation is poured into the anterior and posterior chamber and into the tissue of the iris, and from the posterior portion of the uveal tract into the vitreous. The iris becomes adherent on its posterior surface and pupillary border to the lens and the pupil occluded. Precautionary iridectomy is followed by further exudation and by closure of the coloboma, and finally the ball is enucleated to save the pain of secondary glaucoma. In view of this common termination the inception of traumatic iridocyclitis must be energetically combated by the free exhibition of mercury and the iodids, and the earlier this treatment is instituted the more hopeful the outcome. My experience leads me to believe that the most thorough and rapid method is by mercurial inunction or calomel in small and frequently repeated doses, combined with iodid of potassium in rapidly increasing amounts. Salivation and iodism are postponed and the influence of the remedies increased by the simultaneous institution of the sweat treatment by pilocarpin, hot baths and the usual adjuncts. Locally, the frequent use of strong solutions of atropia, hot compresses, leeches and blisters is indicated. The subconjunctival injections of large quantities of weak solutions of mercury bichlorid are reported to have been useful in checking inflammation and preventing suppuration. Their good offices I have witnessed in one striking case. A non-syphilitic boy of 3 was badly wounded by a rusty iron hinge. The cornea was torn through, the iris and probably the lens were prolapsed, and after a few days the ocular contents showed every indication of becoming purulent. Repeated injections of mercuric bichlorid, 1-10,000, under the conjunctiva saved the ball and made an iridectomy possible.

The general and constitutional symptoms of syphilis are in most cases sufficiently pronounced to enable one to determine the presence of this dyscrasia. For example, in the inherited form we have the facies syphi-

2. Hirschberg, Centralbl. f. Augenheilk., 1891, p. 324.
3. Archives of Ophthalmology, 1901, p. 569.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

litica, the scarred mouth, the Hutchinson teeth, the enlarged glands or the scars of ulcerated and broken-down glands; in the acquired form, the history, the cutaneous stains, iritic synechiæ, chorio-retinitis, point unmistakably to the affection. When, however, there are no indications to be seen or learned, and when one must judge by the course of the inflammation following the injury for which the patient has come under treatment, one is guided by the amount of exudation disproportionate to the degree of inflammation, the nocturnal rather than the diurnal pain and its chronic course. I have not been able to determine that the danger of sympathetic inflammation is any greater in syphilitics than in non-syphilitics. It must be borne in mind in dealing with these cases in which iridocyclitis attacks the uninjured eye that it may be a manifestation of syphilis, developed, perhaps, in consequence of the injury and subsequent inflammation of the other eye for the same occult reason that acute glaucoma is lighted up in one eye after iridectomy on the other for glaucoma. Such accidents can not be attributed to sympathy, or, at least, to the affection of the second eye following traumatisms where the origin of that affection is derived undoubtedly from the traumatism and known as sympathetic ophthalmia. I feel very sure that some of the cases reported as sympathetic ophthalmia, and particularly those appearing weeks or months or years after enucleation are local manifestations in the hitherto sound eye of constitutional affections, with especial reference to syphilis.

DIABETES.

Injuries to the eyes of diabetics are almost invariably the cause of serious damage to, if not of the loss of, the eye. The truth of this statement can be abundantly verified. Those of us who have been careless in examining into the bodily condition before extracting a cataractous lens, or who have had the operation forced upon us, will agree they have had more failures than successes. The tendency of diabetics to gangrene is not more marked in any other portion of the body than in the eye, but fortunately the tendency becomes manifest only after injury. The uveal tract and the tissues that are dependent upon it for their health and growth give early indication of the blood impoverished by diabetes. Iritis, cataract, vitreous opacities and degeneration of choroid and retina in patches are common ocular complications of diabetes, and each of them is evidence of the disturbed nutrition. Now when an injury is the exciting cause of inflammation, the pre-existing tendency to involvement in the general affection will lead to results that are disastrous and entirely unwarranted by the character of the injury. For example, I have recently had under treatment a man who received on the cornea an apparently insignificant injury from impact of a small foreign body. The body was removed. The floor and edges of the wound became infiltrated with pus. In spite of the most active treatment, both for the abscess and the diabetes, the entire cornea was destroyed, exposing the iris and permitting of the escape of the lens and vitreous, necessitating finally enucleation. In another case preliminary iridectomy and massage of the lens for ripening of a cataract was followed by numerous hemorrhages into the anterior chamber, chronic iridocyclitis and loss of the eye.

We learn from these and similar cases: 1, the necessity for the examination of the urine for sugar preparatory to the operation for the extraction of cataract; 2, the obligation to consider all cases of injury serious until they are proven slight; 3, the necessity for strict remedial and dietetic measures in diabetes mellitus, and 4, in spite of treatment an unfavorable prognosis.

TUBERCULOSIS.

In individuals with a predisposition to tubercle, injuries to the eye, and particularly the penetration through the coats of cutting instruments or of foreign bodies, may give rise to local tuberculosis. This is brought about by one of two influences, namely, either the entrance with the foreign body of the tubercle bacillus or the stimulation to activity of bacilli pre-existing in a latent form at the site of the injury. The uveal tract and the contents of the vitreous and aqueous chamber furnish fertile soil for the multiplication of bacteria. Their growth is rapid, and equally rapid is the destruction of the function of the ball. The eye is destroyed by chronic iridocyclitis that is not amenable to treatment. As soon as the diagnosis is established by inoculation of part of the contents of the eye into the eye of one of the lower animals the ball should be enucleated. This is imperative. Delay will mean that the infection will become general and end in the death of the patient. We must expect similar processes of inflammation and disease to follow traumatism to the eye that are familiar in other parts of the body after injuries. Scrofula, which, in the opinion of some writers, is an hereditary form of diluted tuberculosis, is a predisposing cause to tardy healing of wounds, and should not be overlooked in the examination to determine the constitutional reason for chronic forms of inflammation after traumatism.

Early enucleation of a badly injured eye saves the patient and the surgeon annoyance and time, and has become, I think, a fashion. The patient's confidence in his physician must not be betrayed, and the most convincing argument in favor of enucleation, namely, the fear of sympathetic inflammation, should not be abused. One must be convinced beyond the shadow of a doubt that vision is irretrievably ruined before resorting to extreme measures. Nature's recuperative powers combined with human knowledge and antiseptic remedies accomplish wonderful cures. And sympathetic inflammation is not always as black as it is painted. It never follows immediately after the injury, it always gives warning and it may never come. I except from these rules eyes that contain a foreign body that can not be extracted. In the cases of foreign body in which the ciliary region is the site of the injury, or likely to become irritated by the presence of the body in the eye, immediate enucleation is the only safe treatment. The presence of a foreign body is indicated by chronic or recurrent intractable inflammation of the uveal tract. Sympathetic inflammation will supervene in three weeks or later, and can be prevented only by the extraction of the foreign substance or removal of the eye. There ought to be no uncertainty in the diagnosis, for unless the foreign substance is extremely small the x-rays will determine beyond reasonable doubt its presence. In all other classes of injury unless the traumatism is unusually destructive the expectant plan of treatment should be adopted and enucleation reserved as the last resort.

CONCLUSIONS.

1. Injuries to the ciliary zone are always serious and often destructive of the usefulness of the eye.

2. The syphilitic, diabetic or tubercular diathesis delays recovery and renders the prognosis uncertain.

3. Diseases of the uveal tract the result of injuries are favorably modified by the energetic treatment of these constitutional affections.

4. Enucleation or one of its substitute operations is to be practiced immediately when a foreign body lies embedded in the ciliary region and can not be extracted, or when an eye is mangled beyond hope of redemption.

5. Conservative measures, such as cold compresses, antiseptic washes, subconjunctival injections, excision of prolapsed iris or ciliary body, rest in bed, restricted diet, morphia and other means to subdue inflammation should be the rule in other cases.

(The symposium on uveitis will be concluded next week by the papers of Drs. Wilder, Woodruff and Marple and the discussion.)

THE EMPLOYMENT OF DIGITALIS AND ACONITE IN THE TREATMENT OF CARDIAC DISEASE.*

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Among all the difficulties which have beset the subject of the proper use of drugs in disease, and there have been many, as we all know, it can not be doubted that the factor of greatest importance has been the employment of remedies by physicians without their having a correct conception, and sometimes no conception at all, of the pathological process underlying the condition which is to be relieved. This depends on the fact that many practitioners lack preliminary training, not only in morbid anatomy and morbid physiology or pathology, but also fail to study the possible effect of well-known drugs in abnormal states. The employment of certain remedies in disease has cast discredit on therapeutics by their abuse, while many physicians who have carefully studied diseased organs become so saturated, so to speak, with the seriousness of the lesions which they find that they scoff at the thought that drugs can be of service, forgetting that the vital factors are eliminated at the autopsy and that the conditions present represent a state so grave that death has taken place; that is, the worst possible state of affairs is seen. I have made these opening remarks because I do not wish to be considered a therapeutic optimist or nihilist, and because I so often emphasize the fault of using drugs when they can not do good that I fear I may be called a therapeutic unbeliever. In no class of cases does what I have said hold true with greater force than in that of cardiac disease. Some physicians are content to diagnose valvular disease, prescribe digitalis and ignore the state of the heart muscle, the state of the blood vessels and that of the kidneys, liver, and even the dose of the drug, so long as it is within bounds not poisonous.

It has always seemed to me that it is the duty of the physician to study the condition of the heart muscle, and almost entirely exclude any suppositions as to the condition of the valves of the heart. While this may be an exaggerated way of making the statement which I wish to emphasize, it is resorted to because in the majority of instances we are apt to endeavor to decide which segment is diseased without a correspondingly careful study of the condition of the ventricular wall.

Again, it is by no means an uncommon practice of physicians, after determining more or less carefully the condition of the heart, to fail to make a careful study of arterial tension, pulse force, and equally important, to attempt to discover whether there is arteriocapillary fibrosis. On the condition of the heart muscle, and on the development of arteriocapillary fibrosis much more depends in the diagnosis, prognosis and treatment of a case of so-called cardiac disease than is usually thought. It is also not permissible to reach correct conclusions in regard to these important factors in the case unless at the same time the renal condition is adequately investigated. And, again, it is not sufficient in many of these cases to be content with one or two examinations of the urine, which may fail to reveal albumin, unless at the same time estimations of urea are also made, and a careful record of the quantity of urine and of its specific gravity is kept. Not only do these renal conditions aid us in getting information concerning the probable condition of the heart muscle and of the blood vessel, but they also give us an insight into the ability of the kidneys to eliminate poisonous materials, and the drugs themselves, both of which, if retained to an abnormal degree, produce results which are disadvantageous.

I have within the last few years devoted a great deal of attention, not only to these factors in these cases, but also to the question of the proper administration of the various cardiac stimulants, and equally important, as to the dose which each individual patient needs from day to day.

Digitalis, like iron, has proved itself so valuable, doing good in so many instances which seemed grave, that we are wont to forget that, like most things which do good, it can also do harm, and judging from my previous habit, and from the habit of other practitioners, I am convinced that in the great majority of instances digitalis is administered in doses which are much too large, and often continued over a period which is far too long. It is by no means an uncommon thing to find physicians administering as much as 10 or even 20 m. of tincture of digitalis three or four times a day in cases of marked rupture of compensation. There can be no doubt that in some cases such doses are necessary at the beginning of the treatment to meet the crisis which exists, and in much the same way that we are wont to give large doses of mercury in early syphilis, afterward cutting the doses down one-half, so it may be necessary at times to give massive doses of digitalis, which, after a period, should be rapidly and considerably diminished. I have been surprised to find what excellent results I could produce by the use of such small amounts as one or two minims of an active, physiologically tested tincture of digitalis given three or four times a day, the patient being, of course, required to rest and so give his heart that most needed therapeutic aid when its compensation is ruptured.

Apropos of this, I may add that in my belief we often fail to get results from doses and from drugs on which we rely, more because we are careless as to the physiological activity of one product than because we have made an error in judgment as to the remedy which is needed or the dose which is required. With the important subject of the employment of drugs closely related to digitalis in the treatment of various cardiac conditions there is not space to deal in this paper. In deciding what cardiac stimulant is required in a given case we must not only consider the condition of the valves and the myocardium as already indicated, but we must, if possible, reach some conclusion in regard to the state of the coronary arteries. Digitalis, which improves the nutrition of the heart, largely by improving the circulation in these arteries, can manifestly do more harm than good if these nutritive vessels are so nearly closed that it is impossible for the heart to pump blood through

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

them in increased quantity; and again, if the myocardium has undergone such advanced degeneration that it is impossible for the digitalis to improve the nutrition of the heart, although at the same time it may be driving the remaining healthy fibers to an endeavor far in excess of their ability.

I am also quite sure that in a certain number of cases of valvular disease the patient does not require digitalis or any other cardiac stimulant for the relief of his cardiac symptoms; but, on the other hand, in addition to rest, will often be greatly benefited by the administration of aconite, which has a steadying effect on the heart through its influence on the vagi as has digitalis. By its sedative influence on the heart muscle in hypertrophy, which sometimes produces an excessive irregularity, and by its relaxing effect on the blood vessels, it produces good results. It is much easier for us to conclude, in the case of valvular disease, with dyspnea and disturbed heart action, that these symptoms are due to a failing heart than that they are due to a hypertrophy and an excessive activity. Such cases I have frequently seen in men who are well developed, in the muscular sense, and whose occupation has caused them to do heavy manual work or who take part actively in some of the severe athletic games. And not infrequently have I seen other cases in which the use of well-balanced doses of aconite and digitalis have produced results which neither drug could produce by itself, although at first glance they are physiological antagonists.

Finally, the utter uselessness of expecting good results from either of these drugs in the treatment of certain cases of myocardiac disease which persistently take severe exercise "for their health" needs to be emphasized. I have repeatedlv seen cases of men of advanced years with somewhat fibrous vessels who have mistaken the heaviness of advancing years for the heaviness of lack of exercise, and who on the golf field, on the bicycle, or by rowing or walking, have tried to drive away the symptoms from which they suffer, with a result that sooner or later the condition from which they are suffering becomes greatly aggravated and they become more or less invalids if they are so fortunate as to escape sudden or nearly immediate death from their ill-judged efforts. It seems to me, too, that when we are attempting to treat such cases, and are endeavoring to administer doses and remedies as accurately as possible, we should insist on a quiet and careful mode of life until we are able to determine that the remedies suit the case. Otherwise the change of exercise or change in diet may not only prevent the remedies from doing good, but also warp our judgment as to the plan of treatment, and so prevent us from instituting it in another case, when in reality had proper precautions of this kind been taken we would have increased confidence and been able to do much more good to a large class of patients. It is not to be forgotten that every one in this room sooner or later, according to his years, his inheritance and his mode of life, develops more or less arteriocapillary fibrosis, degeneration of his myocardium and sclerotic changes in his kidneys.

I may close by saying that curiously enough a very large proportion of the patients to whom I have just referred are physicians who, after a long life of ntense nervous strain, not infrequently find themselves at a comparatively early age suffering from disorders of the heart the true nature of which they fail to recognize, either because on examining this organ they fail to discover murmurs, or because they do not appreciate the fact that a physician's life is peculiarly apt, as is that of the banker and large business manager, to develop degenerative cardiac changes. The employment of strychnin, belladonna and other drugs in connection with digitalis and aconite might be considered if time permitted, but they are not included in the title of this paper and therefore can not be discussed.

DISCUSSION.

DR. H. B. FAVILL, Chicago—The paper of Dr. Hare deserves very thoughtful attention, inasmuch as it bears on one of the most perplexing of therapeutic puzzles. How to avail ourselves of the valuable powers of digitalis, at the same time escaping its disadvantages, has been a great problem and becomes steadily a greater problem as these disadvantages become more obvious. In general, this is a parallel procedure to that of combining digitalis and nitroglycerin, though there are decided differences in the deeper physiologic activities. The latter combination is by no means uniformly satisfactory, and there is no doubt that the suggestion of Dr. Hare is important as an additional resource under these indications. I shall make it a point to employ this combination under appropriate conditions.

DR. ALLEN A. JONES, Buffalo—I agree with what has been said regarding the danger of digitalis in large doses when there is myocardial disease, especially when due to disease of the coronary arteries. In a case recently observed, a man of some age took 10 minim doses of digitalis every four hours. When I saw him he was almost in collapse. The pulse was extremely slow and the heart had apparently stopped beating. He certainly was in bad shape. Under the use of nitroglycerin and strychnin, absolute rest and proper management, the man recovered. I warned him against the danger of using digitalis in that way.

DR. J. M. ANDERS, Philadelphia—I was much impressed with the sound advice given by Dr. Hare and am quite of the same opinion regarding the giving of too large doses of digitalis, and the too long-continued use of this drug. Allusion was made to the combined use of digitalis and aconite in certain conditions; while the Doctor did not consider the other remedies often combined with digitalis it seems to me that a brief allusion should be made to nitroglycerin, which should guard the action of digitalis, more particularly in hardening of the vessels. Nitroglycerin is of service where the myocardium is the seat of fatty or fibroid change and the blood vessels sclerotic. This drug does not weaken the action of the heart. On the contrary, in small doses it is a cardiac stimulant and a combination of nitroglycerin with digitalis acts well in certain cases as a stimulant to the heart, while at the same time it widens the blood paths. I have had no experience with the combined use of aconite and digitalis.

DR. HARE, in closing—Of course, it goes without saying that I am in accord with what Dr. Anders has stated with regard to nitroglycerin and digitalis. Digitalis should rarely be prescribed unless a careful study of the pulse tension is made, for we know that digitalis will increase the pulse tension. Regarding the study of digitalis, I instruct my students how to give this drug to a patient whose heart is failing, by the following simile: If you see an old man staggering under the weight of a bundle of fagots there are two ways to relieve him: first, give him a drink of whisky, which will increase his endeavor; second, or better still, remove some of the fagots. So with digitalis in cardiac diseases. If you give digitalis without nitroglycerin to guard against the increased rise of pressure, you stimulate the heart without removing its burden; if you combine the nitroglycerin with the digitalis, you both stimulate the heart and also relieve it of some of its burden.

I did not have an opportunity in my paper of calling attention to a factor in connection with the influence of digitalis which is comparatively a new one. Two or three years ago an excellent paper was published in the *American Journal of Physiology* in which it was pointed out that the heart muscle was not only nourished through the blood flowing through the coronary arteries, but also through openings of the foramina

Thebesii. The wide mouths of these various vessels open and become filled thoroughly with blood and then, by a secondary capillary circulation through these vessels, the heart muscle is supplied with fresh blood. I do not doubt that there are many cases found at autopsy with advanced degeneration of the coronary arteries showing that digitalis given alone would be useless, perhaps injurious. Then, again, such an appearance might controvert the idea that digitalis is useless, for the benefit the patient has received may be due to the influence of the drug on the heart muscle carried there through the veins of Thebesii. I feel quite convinced that the blood so carried to the heart will readily part with its oxygen and nutritive material. I have always felt that the subject of the use of digitalis was an important one because of the grave condition of patient. I am convinced that many physicians do not have a sufficient regard for the pathology of the heart, i. e., the morbid physiology of the heart. I think this is one of the faults of the medical course of to-day; students are taught to listen to diseased hearts, but little is taught them about the proper function of the organ; they are told what happens in a normal heart in its normal cycle, but not informed as to what happens to the heart when it is diseased, or if the valves are destroyed. They are not taught enough about the employment of the different stimulants on such a heart. I am convinced that physicians who understand the use of chloroform and ether, who use chloroform in some cases and ether in others, nevertheless treat every case of valvular disease of the heart with digitalis as a routine method. When administering this drug one should first study the condition of the heart muscle and its valves and arteries.

THE ORIGIN OF THE VESICULAR RESPIRATORY SOUND.*

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The origin of vesicular breathing was attributed by Laennec to friction of the inspired air in the bronchioles and its entrance to the infundibula from the bronchioles. This inflammation was sanctioned by such masters as Skoda and Wintuch and remained unquestioned, so far as I am able to learn, until Baas attempted to explain on purely acoustic grounds the improbability of any audible sound originating in tubes the size of the bronchioles from the passage of a current of air with the slow velocity which must attend the entrance of inspired air in the vesicles of the lung. Baas' article published in the Deutsche Arch. für Klin. Medicin, vol. xix, 1876, is a profoundly thoughtful and logical discussion of the subject which was well calculated to carry conviction to the mind of the reader. I was greatly impressed with the acute reasoning of the author the first time I read the article several years ago, but in the light of recent clinical experience and the attempt to confirm some of Baas' observations, I am reminded of the voluminous monograph on the habits of the camel, the contents of which emanated from the inner consciousness of the author.

Penzoldt later offered experimental evidence to sustain the logic of Baas. The experiments of Penzoldt were very simple. They consisted in inflating a calf's lung and placing it over the trachea of a man who is instructed to breathe in the ordinary way. If a stethoscope be placed on the inflated lung the observer will perceive (according to Penzoldt) the tracheal breathing transformed to the vesicular type of respiration. This is accounted for by the refraction and partial reflection of sound waves which must occur during their transmission through such heterogeneous media as are presented in the inflated lung. If a more homogeneous medium be used, such as the calf's liver (according to Penzoldt) the tracheal breathing retains its so-called bronchial character. Sahli tried the experiment as described by Penzoldt but found the respiratory murmur transmitted through the inflated lung retained its bronchial character. The only modification, according to Sahli is a diminution in intensity of the respiratory sound.

My own observations confirm those made by Sahli. In repeating this experiment it seemed to me that only a vigorous use of the imagination could transform the audible sound into a vesicular murmur or anything approximating it. Vesicular breathing and bronchial breathing have several essential differences which will not admit of the transition of the former to the latter on the acoustic grounds cited by Baas. The terms, sound and murmur, are differentiating terms which are descriptive of two phenomena. Bronchial respiration gives a clearly definite, and simple sound which can be assigned a certain pitch. Vesicular respiration gives a confused mingling of sounds which suggest a multiplicity of points of origin. The pitch is much lower and the expiratory sound is much shorter in duration than in bronchial breathing. However remote and faint bronchial breathing may be, the duration of the expiratory sound remains the same, whereas, in vesicular breathing the expiratory sound is relatively short, whatever may be its intensity or proximity.

The observations on the case I am about to report offer absolute proof of vesicular breathing having an origin different from that of bronchial breathing:

I was called one evening to see a man 82 years old who, during the same day, had developed a violent hiccough. The patient had a temperature of 101 degrees. The base of the left lung posteriorly gave a high-pitched tympanitic percussion note with increased resistance. Tactile fremitus was not increased. During inspiration were an abundance of medium and fine moist râles. The respiratory sounds over the affected area was slightly higher in pitch, but unfortunately for the completeness of my observations, the sound had not acquired a bronchial character. The hiccough presented a very striking picture, and would recur about every half-minute during a period varying from one-half to two hours, and then disappear to return after an interval of three or four hours. So, the hiccough was present about four to six hours in every day. The patient laid 14 days in this condition until death came in the form of vagus exhaustion, so there was ample opportunity to study the details of the hiccough. The hiccough occurred frequently during sleep without waking the patient. Each attack commenced with a moderately loud laryngeal sound and was followed directly by from ten to twenty violent retractions of both hypochondria at the rate of about two to a second. The hypochondria fairly flopped, so that it strongly suggested the flopping of the wings of a barnyard fowl. The spasms of the diaphragm occurred in such rapid succession that a complete evolution of the diaphragm phenomena was not discernible, though the band of retraction over the pleural sinus was plainly visible. The contraction of the diaphragm lasted so short a time, the descent of the lung was so slight, it could not be demonstrable by percussion, though on occasions it was slightly perceptible to the eye. Auscultation during the attacks revealed a loud respiratory murmur everywhere over the lungs, over the apices, as well as the bases, which though short in duration plainly gave the characteristics of vesicular breathing. The duration of the sound during the relaxation of the diaphragm sustained the same relative duration to the sound during phrenic contraction which the expiratory sound sustains to the inspiratory sound during normal respiration. Over the infiltrated lung area râles could be distinctly heard during the contraction of the diaphragm, though not with the same intensity as with forced inspiration. If the stethos-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

cope was placed over the larynx or trachea during the spasms of the diaphragm there was no sound audible. It was perfectly clear that with the onset of each series of phrenic contractions the glottis was tightly closed. That there was movement of the air contained in the respiratory tract toward the infundibula is proven by the occurrence of râles over the pneumonic area, but this was accomplished by rarification of air in the trachea and larger bronchi.

The observation offers absolute proof of the existence of a true vesicular respiratory sound. Whether the sound is due to the disturbance of equilibrium of the lung tissue or to motion of the contained air, or both, is not determined, and I see no possible method of differentiating between these two factors as they are both essential premises for any clinical or experimental observations which can be made. In this case laryngeal and tracheal breathing were eliminated, there was an increase of the antero-posterior diameter of the thorax with each spasm of the diaphragm. All the muscles employed in inspiration were brought violentlv into action. The volume of the thorax was increased with each spasm of the inspiratory muscles by rarifying the air contained in the respiratory tract, and still the typical murmur of vesicular breathing was audible.

The nearest approach to these conditions I have found was in the case of fissured sternum, reported by Sahli. But in Sahli's case tracheal breathing was not eliminated. It would be impossible to reproduce the conditions of this clinical observation by any animal experiment. I can not conceive of such violent inspiratory efforts being produced by stimulation of the phrenic nerves alone. Since making the above clinical observation I have made the following experiment: On a healthy man, have the subject close the glottis and then make a violent inspiratory effort. At the same time auscult the lungs and you will hear a faint vesicular respiratory sound during the inspiratory effort and a faint expiratory vesicular murmur as the muscles are relaxed, though the glottis remain shut. The sound heard during relaxation of the inspiratory muscles is lowered in pitch and short in duration. The two sounds are identical in their character and their relations with the normal vesicular respiratory murmur. The sounds produced in this manner by a strong man do not, however, approach the intensity of the sounds produced by the old man with the pneumonia.

REPEATED SMALL HEMORRHAGES AS A CAUSE OF SEVERE ANEMIA.*

JAMES B. HERRICK, M.D.
CHICAGO

That recovery may rapidly follow a severe acute hemorrhage is well known. Even repeated severe hemorrhages may cause no permanent deviation from health, if the intervals between hemorrhages be sufficiently long to permit regeneration of blood to take place. The body may also stand repeated small losses of blood at shorter, even daily, intervals, with little or no perceptible change in the blood or in the performance of function on the part of any organ. Repeated hemorrhages from the nose, from hemorrhoids, from uterine fibroids may thus be endured for months or for years, the tolerance of the individual to the loss of blood and his power of blood regeneration being sufficient to withstand and make up for the daily drain. But in other instances, the daily loss of small amounts of blood produces the most severe and even fatal forms of anemia. It is my purpose in this brief paper to call attention to the importance of recognizing this form of anemia; and I treat the question from the practical and clinical, rather than from the hematologic point of view. My attention has been called to this subject by having seen five patients with bleeding piles in whom there developed a most grave secondary anemia. And I am led to write on this topic because in all of these cases the cause was for a long time overlooked and because in three of them even when the nature of the anemia had been pointed out, there was a disinclination on the part of some to regard so common and so insignificant a condition as bleeding piles as the cause of an anemia so profound and so clearly threatening life.

CASE 1.—The first case I saw while acting as assistant to the late Charles Warrington Earle. After trying in vain by iron, arsenic, tonics, rest, etc., to restore color, strength and health to a previously robust man, Dr. Earle decided to operate on the bleeding hemorrhoids. The result fully justified his suspicions as to the nature of the anemia, for the man made an uninterrupted recovery within a few weeks.

CASE 2.—The second case was the wife of a physician. She presented the typical appearance, symptoms and blood findings of a severe chlorosis. For weeks she had been losing blood with every bowel movement, often several ounces at a time. Iron and other remedies were without perceptible effect. The immediate operation that I advised was deferred because of the weak condition of the patient, a slight temperature and a loudness of the hemic murmur which made the surgeon feel that there was an organic heart lesion that might account for the anemia and that contra-indicated an anesthetic. Several months later when the patient could scarcely walk across the floor without fainting, and when my second examination confirmed the previous findings of a grave secondary anemia, most urgent advice was again given as to operation. The hemorrhoids were attended to, the anemia disappeared and the patient has ever since been in perfect health.

CASE 3.—A third patient, an old man in the sixties, had an appearance suggestive of malignant growth. Yet there could be found for his profound anemia of the chlorotic type, no tumor, tuberculosis, nephritis or other cause than some hemorrhoids that had bled daily for nearly three years. He refused an operation and was lost sight of. His blood on May 18, 1901, the date of the first examination, showed 2,450,000 red corpuscles, 6000 whites (74 per cent. polymorphonuclear), no nucleated reds, hemoglobin 29 per cent. The cells were smaller than normal, volume index .72, the time of coagulation was four minutes.

CASE 4.—The fourth case which I report more in detail concerns A. K., a Bohemian of 39. His family history was negative and he himself had pursued his occupation as a butcher, annoyed by no illness up to two years before the time I first saw him, the fall of 1901. In 1899 he had articular rheumatism and was kept from work for several weeks. From this he recovered. In September, 1900, he noticed that he was passing blood at stool. The amount was often several ounces, frequently a half teacupful being passed. He grew pale, weak, dyspneic, dizzy and by May, 1901, could barely keep at work. His feet and ankles by this time were edematous. Medicines seemed to do him no good and in August, 1901, he took to his bed, which he had left only rarely since. The bowels moved once a day, a varying amount of blood being lost with nearly every movement. He was under my care for a time in the

*Read at the meeting of the Illinois State Medical Society at Quincy, May 22, 1902.

Cook County Hospital. Here a surgeon refused to operate on him until I had improved his general condition, saying the piles could well enough wait awhile and needed only suppositories. The patient later came to the Presbyterian Hospital, and I quote from my records of the case while he was in that institution.

Examination.—Oct. 30, 1901, he was seen to be extremely pale, with a hint of a lemon-yellow in the waxy whites of the eyes. He was somewhat emaciated, listless and apathetic as are many patients in the last stages of pernicious anemia. He was extremely weak. His lungs were clear. The heart showed no change except a systolic murmur, evidently hemic. The venous hum was marked. The abdomen and genitalia showed nothing abnormal. There was a slight edema about the sacrum and the ankles. The rectum bled on digital examination, its walls were soft, there was no stricture. On straining he brought down several large hemorrhoids that dripped blood. The examination for motor or sensory disturbances was negative. The retina was negative. His urine contained no sugar, albumin or casts. He had an evening rise of temperature at times to 100°. His pulse averaged 84, his respirations 24. The blood examination made Oct. 29, 1901, was as follows: Red corpuscles, 2,184,000; white corpuscles, 4200; hemoglobin (Fleischl, 3 tests) 19 per cent.; color index 0.44; time of coagulation, three minutes.

In the stained specimen the red corpuscles showed great variations in shape and size, the greater number being undersized. The color of the corpuscles was poor and there was fairly well-marked polychromatophilia. In a careful and prolonged search one nucleated red of the megaloblastic type was seen, and five normoblasts. Of the leucocytes the polymorphonuclear neutrophiles made up 44.6 per cent., polymorphonuclear eosinophiles 3.0 per cent., small mononuclear lymphocytes 35.7 per cent., larger lymphocytes 16.4 per cent. There were 0.3 per cent. of basophiles. Many subsequent examinations were made by myself and by different members of the house staff. The results were practically the same. The hemoglobin reading was generally made by taking two or three capillary tubes of blood instead of one and dividing the total reading by 2 or 3 as the case might be, seeking in this way to lessen the possibility of error that so easily creeps in when the hemoglobin is low. In my office, later, I also controlled by the Tallqvist color test. From these many examinations I quote only some of the more pertinent findings. November 4, the specific gravity was found to be 1034 by Hammerschlag's method by two examiners. The volume index, i. e., the number of corpuscles found by the hematocrit divided by the number found by the hemocytometer, was estimated at different times and also found less than 1, varying from .66 to .86. The findings seemed typical of a severe anemia of the chlorotic or secondary type. The small size of the corpuscles, the abnormally low color index, the rapid coagulation, the scarcity of nucleated reds, those found being almost exclusively normoblasts—all this seemed to rule out the primary pernicious anemia.

The bleeding hemorrhoids were looked on as the probable cause and operation was decided on. This was deferred for several days because of a peculiar and puzzling attack that the patient had on November 6. November 4 he vomited, also fainted while in the bathroom. On the evening of November 5 his pulse rose to 128, his respiration became short and shallow, 30 to the minute, his temperature reached 100.2°. His muscles twitched and he became stupid and semi-comatose, muttering to himself, picking at the bed-clotnes, having retention of urine. There was no paralysis. In twenty-four hours he gradually regained consciousness. The exact nature of this coma is not clear. It was probably some form of intoxication. Color is lent to this theory by the fact that for several days he had not only been taking good-sized doses of iron and arsenic but he had been on full diet, in reality over-eating, with resulting gastro-intestinal disturbance. This may have been the source of the toxemia that in his weakened condition produced these alarming symptoms. During this attack the leucocytes rose to 14,800.

Following this attack he was kept quiet, given food more cautiously, also iron and tonics. His condition remained about the same as before. There were daily losses of blood. Late in November, under cocain anesthesia, as a general anesthetic seemed too hazardous, Dr. A. D. Bevan injected the four large hemorrhoids with equal parts of carbolic acid, water and glycerin. Dr. Bevan admits that he was skeptical as to the hemorrhoids being the cause of the unusually severe anemia, but operated at my urgent solicitation. From that time up to April 12, 1902, when I last saw him, there had been no more bleeding. Iron has been continued, generally in the form of Blaud's pill. The abbreviated blood counts are as follows:

Dec. 5, 1901.	R. b. c. 2,784,000.
	Hb. 27.5 per cent.
Dec. 21, 1901.	R. b. c. 3,800,000.
	Hb. 37 per cent.
Jan. 3, 1902.	Hb. (Fleischl) 61 per cent.
	(Tallqvist) 60 per cent.
Feb. 21, 1902.	R. b. c. 3,920,000.
	Hb. (Fleischl) 72 per cent.
April 5, 1902.	Hb. (Fleischl) 90 per cent.
	(Tallqvist) 85 per cent.

For several weeks he has deemed himself to be as strong as ever, with no dyspnea, having a good appetite and digestion. He has regained the appearance as to color and weight of a healthy man. He is prevented from working by a return of the rheumatic pains in his hands and feet. The joints have shown redness and swelling. He has had an occasional temperature of 99.4° when he has been in my office.

CASE 5.—A case similar in many respects to this one was in the Presbyterian Hospital at about the same time, under the care of Dr. Palmer Findley. Through Dr. Findley's kindness I was enabled to see the patient several times. There was a history of bleeding piles for several years, the bleeding having been for ten months very severe. The ordinary anemic symptoms were present in the shape of dizziness, occasional attacks of syncope, palpitation, etc., and the same blood characteristics as in the other case, the hemoglobin being at first 18 per cent. and the red blood corpuscles 1,952,000. An operation on the hemorrhoids was done and the patient continued to improve, though slowly. At the time of leaving the hospital, six weeks after admission, he had 3,016,000 red corpuscles and 36 per cent. of hemoglobin.

The practical lesson to be drawn from these cases is perfectly plain. It is that severe anemia threatening life and producing a pallor and weakness equal to that of the pernicious variety, or suggesting some hidden malignant disease, may at times be caused by repeated small hemorrhages often from a condition as easily recognized and easily remedied as hemorrhoids. This form of anemia may prove fatal; and cases of a transformation of the type into the pernicious are reported, especially by English writers; and Ehrlich inclines to the belief that the pernicious variety may have its origin in repeated hemorrhages. The careful blood examination showing the chlorotic or secondary type of anemia should give encouragement for immediate measures looking toward a checking of the hemorrhage. The hemorrhage once stopped, recovery, though it may be slow, is generally complete.

103 State Street.

An overcrowded profession would not be the burden of professional complaint if the people were taught to employ medical counsel earlier, oftener, and to retain it longer as they should, before people have to be sent to bed by illness. Twice as many physicians are needed by the people as are employed. In times when epidemics are pending or approaching the people should be put in organic and functional condition for meeting and successfully combating disease. It is now the custom to wait till the human machine is broken and prostrate before asking medical counsel and aid.—*Alienist and Neurologist.*

A NEW INSTRUMENT FOR INTESTINAL ANASTOMOSIS.*

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During my sojourn in Europe in the summer of 1900 I spent a considerable portion of my time performing surgical work on the cadaver, to which I had ample opportunity. It was then that I conceived the idea of constructing an instrument to facilitate intestinal anastomosis. After my return to St. Paul I commenced experimenting in that direction, and soon produced an instrument which, after a few modifications, proved to

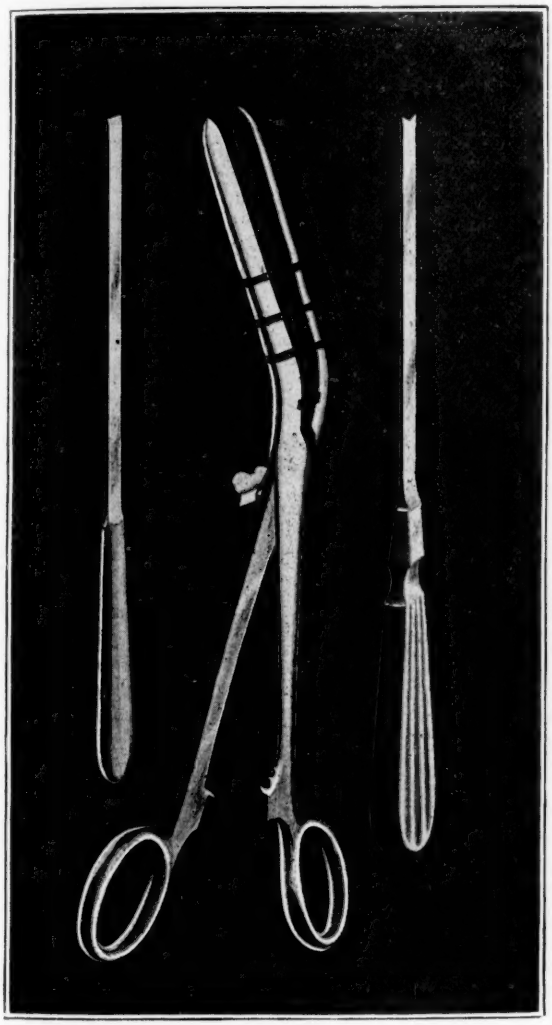

Fig. 1.—Intestinal anastomosis forceps. 1. Longitudinal grooves on inner surfaces of the blades, forming a rectangular tunnel closed at one end, when forceps are locked. 2. Transverse grooves extending around outer surfaces of both blades. 3. Sharp-pointed sliding stylet, to be introduced into the tunnel formed by the grooves in order to cut the intervening visceral wall. 4. Blunt sliding stylet to be heated and introduced into the tunnel after cutting is done, thereby preventing eventual hemorrhage.

be very satisfactory. In hope that it will be accepted as an addition to our surgical armamentarium I hereby wish to present it to the profession.

It appears, as we notice, similar to an ordinary clamp forceps, the blades of which are dull-pointed and bent at an angle of about 125 degrees to the handles. The inner surfaces of the blades, which, by the way, are not toothed or corrugated, but plain, have each a deep longitudinal groove going from the angle nearly to the point of the blades. When the forceps are locked those grooves are placed opposite each other, forming a rectangular tunnel into which a narrow, sharp-pointed stylet, going with the instrument, is to be introduced at the operation. When the forceps are wide open the blades can be taken apart and put together as an ordinary hemostatic forceps. But by loosening the nut of the thumbscrew a couple of turns the blades can also be taken apart and put together when only a little open. This is of great advantage in some operations where lack of space does not permit the blades to be spread out sufficiently. In order to determine how far the blades are introduced both blades are graduated with three narrow transverse grooves 1 cm. apart, which also serve as fixing points for the puckering string by which the edge of the visceral opening is tied around the blades.

Gastro-enterostomy, both anterior and posterior, as well as all kinds of lateral anastomoses, is made com-

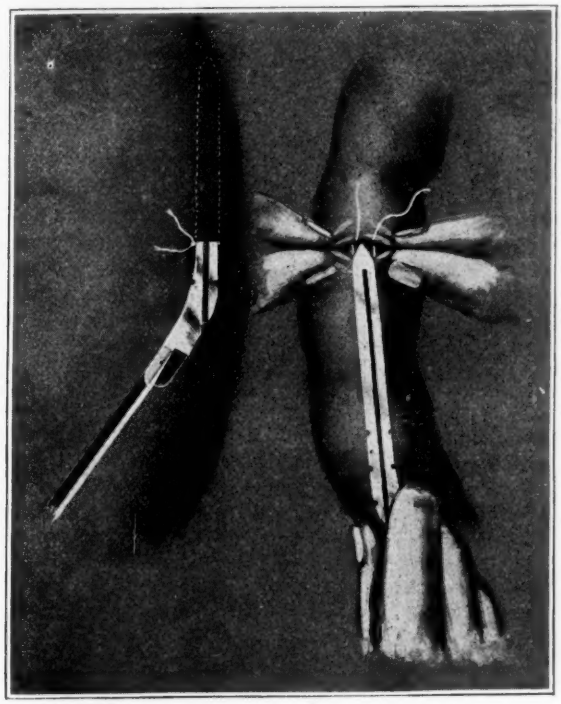

Fig. 2.—Showing first steps of operation. One blade of forceps has pierced gastric wall and is held securely in position by tightening and tying the puckering ligatures in one of the transverse grooves. This also protects from possible leakage of stomach contents. The other blade, in the operator's right hand, is held ready to be pushed through into the lumen of the intestine in the center of the pucker. In order to guard against accidental penetration of both intestinal walls, the anterior wall is held up steady by thumb and index finger of operator's left hand (to the left on the figure), and also in the same manner to the right by an assistant.

paratively easy and safe with this instrument. End-to-side and end-to-end anastomoses are more difficult.

THE METHOD OF USE.

The surgical technic is simple. The abdomen having been properly opened, the bowels to be approximated are drawn into the opening and the forceps taken apart. The part of the bowel selected for anastomosis is lifted up and stretched transversely between two folds and one blade pushed into the bowel as far as desired, care being taken, of course, not to penetrate the opposite intestinal wall. The same thing is done with the other bowel and the forceps are locked. As the blade has a tendency to slide out again before the forceps are locked I generally first put in a puckering string around the

* Read and demonstrated before the Ramsey County Medical Society, St. Paul, Minn.

spot where the blade is to be introduced, and after the blade is pushed in that string is tied over one of the transverse grooves. The distal end of each blade is now inside of its respective viscus, firmly pressing together the walls of the viscera to be approximated. With a continuous silk suture the adjacent surfaces of the bowels are now united, the sewing being very easy when the bowels are held stretched over the blades. The silk suture is to penetrate all the coats. Then follows a catgut suture, uniting only the serosa and possibly the submucosa. The sharp-pointed stylet is next pushed into the tunnel formed by the longitudinal grooves, whereby the intervening visceral walls are divided and the desired communication established. In gastro-enterostomy a heated, dull-pointed stylet is next introduced into this tunnel in order to prevent

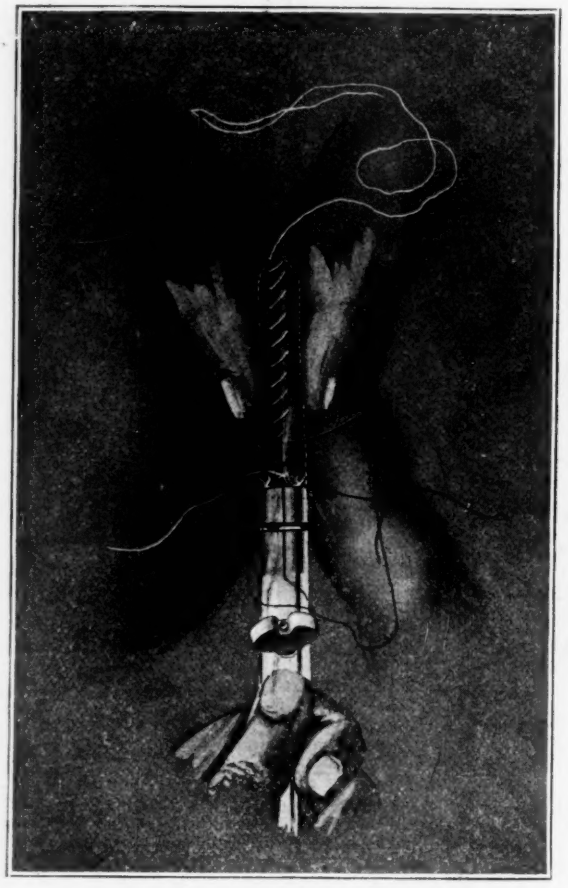

Fig. 3 shows the upper side of the forceps after it has been introduced and locked. The two blades of the instrument hold the gastric and intestinal walls in juxtaposition, pressing them firmly together. The original puckers are seen tied around the blades. A continuous silk suture (white) going through all the layers and also a superficial catgut (black) are sewed over the upper surface of the instrument. Note that the ends of both silk and catgut sutures are left long to be tied with the other ends of the same sutures when suturing is completed all around the anastomosis and instrument removed. The forceps are held by an assistant and the fingers of the operator's left hand are holding the parts to be sutured somewhat tense over the instrument, thus very materially aiding the placing of the sutures.

eventual hemorrhage after removal of the forceps. This latter procedure may not be necessary, but, as the stomach wall generally has some tendency to bleed, I have resorted to it as a safeguard. The instrument is unlocked and withdrawn and a few stitches of silk and catgut will close the remaining opening, thus completing the anastomosis. The operation is much more easily demonstrated than described.

OTHER SIMILAR INSTRUMENTS.

When I first had my instrument made I was satisfied that it was something entirely new, until a friend of mine directed my attention to an instrument constructed on the same principle by Dr. Ferguson of Chicago. He again claims that his instrument is a modification of a similar one devised by Dr. Grant of Louisville, Ky. A short time ago I had opportunity to see Dr. Ferguson's instrument, but I have never seen Dr. Grant's. Although my instrument differs from Dr. Ferguson's in numerous details, and I dare say is superior to his, I can, of course, not claim priority for the principle on which it is constructed. The same belongs probably to Dr. Grant. The forceps of Dr. Laplace, McLean and O'Hara as well as Murphy's button have nothing in common with this.

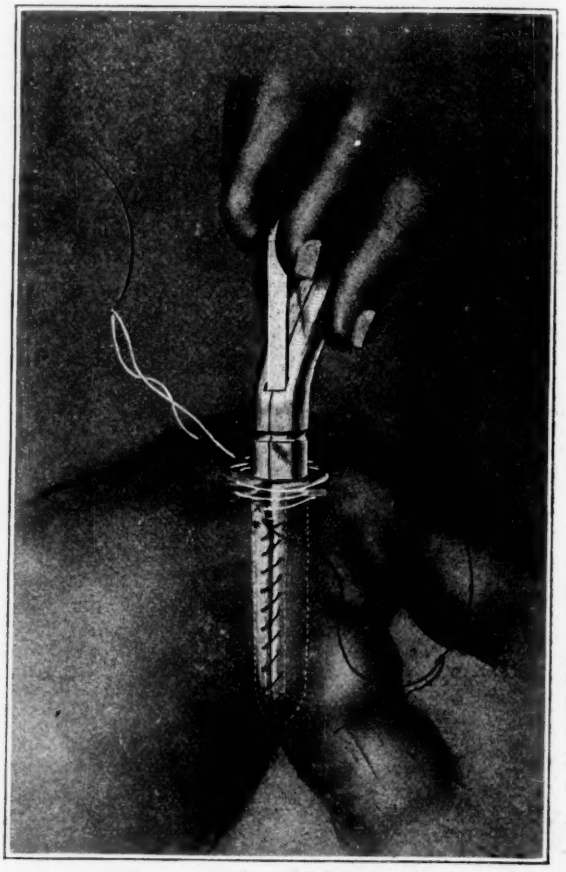

Fig. 4 represents under side of the instrument. The silk suturing is completed to the point X, where it is tied, but not cut, after which three loose stitches are placed around the instrument, ending at the starting point. The catgut suture is completed to the point * where it is also tied and left long. The sharp-pointed stylet is pushed into the tube formed by the two longitudinal grooves in the blades, thereby severing the intermedial visceral walls and also the two pursestring ligatures which were placed primarily around each blade.

I have extensively tested this instrument on cadavers, but so far made only nine anastomoses on six living persons, all of which proved eminently successful.

In gastro-enterostomy I have always performed the anterior one, but the posterior could with this instrument, be performed just as easily. The jejunum has been attached to the stomach about 50 cm. from its upper end and always isoperistaltic. The entero-anastomosis is about 20 cm. below the gastro-enterostomy. Lavage of the stomach before the operation has not been done in the last four gastro-enterostomies, and I

never needed to do it after the operation. Generally, I commenced to give my gastro-enterostomy patients light diet on the second day after the operation, or as soon as the effect of the anesthesia had disappeared, and full diet about a week after the operation.

NARRATION OF CASES.

CASE 1.—Mrs. J., 48 years old. Gastric trouble for over ten years and during last month daily vomiting after meals. Tumor palpable in epigastrium. Very anemic and cachectic. Diagnosis: cancer of the stomach. At the operation the anterior wall of the stomach was found extensively adherent to the anterior abdominal wall, the loosening of which resulted in tearing a big hole in the stomach whereby some of the gastric contents escaped into the abdominal cavity. After extensive resection and repairing of the anterior stomach wall anterior gastro-enterostomy without entero-anastomosis was performed with this instrument. Perfect recovery. Several months after the operation I saw this patient again, perfectly well as far

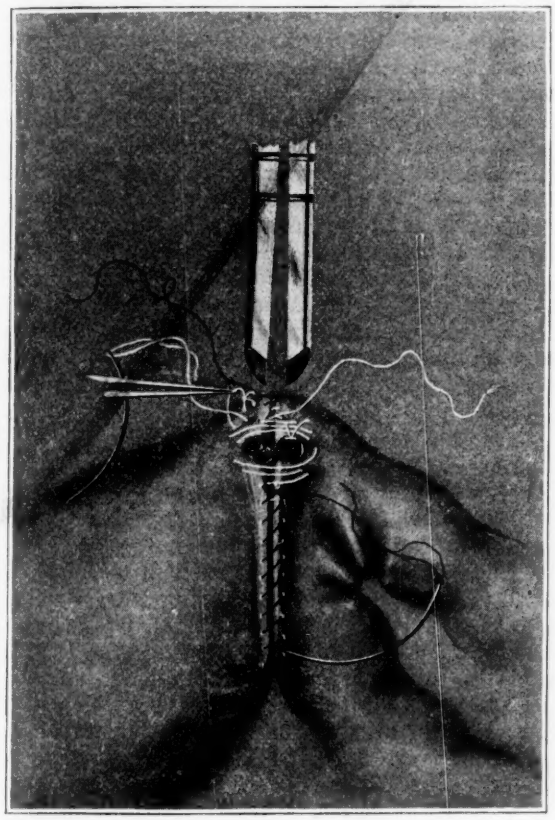

Fig. 5.—The instrument is removed. The primary puckers around each blade of the instrument, which were cut by the sharp-pointed stylet, are picked up by a dissecting forceps, F. The edges of perforation produced by the instrument are to be inverted, the stitches already placed tightened and the two ends of the silk suture tied together.

as her stomach was concerned, but complaining about lumps on her neck, evidently cancer metastases, from which she finally died without having experienced any more trouble from her stomach.

CASE 2.—Mrs. L., 48 years old. Gastric trouble with vomiting for years, several times bloody. No palpable tumor. Very anemic and poor. At the operation was found a large pyloric tumor and extensive metastases in both omenta. Anterior gastro-enterostomy without entero-anastomosis with my forceps. This patient was considerably improved by the operation but had, as well during her stay at the hospital as afterwards, several attacks of circulus vitiosus. From my experience in this case I have always since combined gastro-enterostomy with entero-anastomosis.

CASE 3.—Mrs. M., 60 years old. Symptoms of partial intestinal obstruction for years. Movable, palpable tumor in lower part of abdomen. Anemic and poor. Operation. Intestinal tumor as large as a fist, apparently malignant, narrowing the lumen to the size of a lead pencil and numerous metastases in mesenterium and retro-peritoneal tissue, some of them impossible to remove. Intestinal anastomosis with my forceps. Left

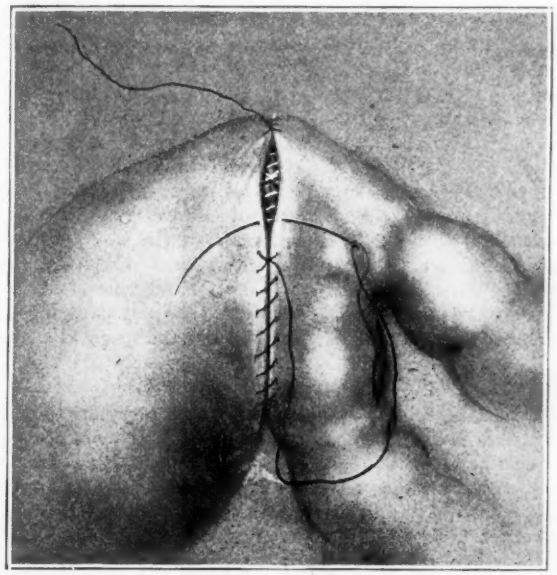

Fig. 6 shows the silk suturing completed. The last two or three catgut stitches are then finished and the two ends of the catgut tied together.

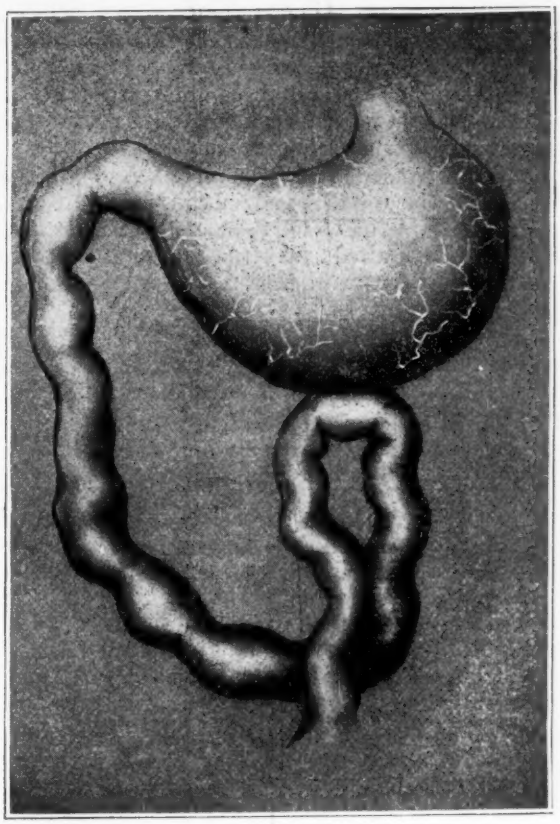

Fig. 7.—Diagram of the anastomosis completed. The intestinal anastomosis is performed in exactly the same manner as gastro-enterostomy.

hospital evidently cured of the symptoms of obstruction and has not been heard from since.

CASE 4.—Mr. S., 51 years old. Symptoms of pyloric stenosis and dilatation for many years. About six years before the operation I taught the patient to use the stomach tube with

which he got along for awhile. He finally came back asking for relief from the fearful vomiting which kept him awake nearly every night. No palpable tumor. Somewhat anemic but not cachectic. Operation revealed a very dilated stomach with a moderate degree of pyloric stenosis. No malignant tumor. Anterior gastro-enterostomy and entero-anastomosis with my instrument. Perfect recovery. Has several times afterwards reported that he is in perfect health and follows his occupation as a farmer.

CASE 5.—Mrs. O., 43 years old. Symptoms of cancer of the stomach, with pyloric stenosis. Large palpable tumor. Nearly constant vomiting. Utterly anemic and poor. Although an operation was described to her in a very unfavorable light she wished to undergo the same as a means to get relief in one way or the other. Anterior gastro-enterostomy and entero-anastomosis with my instrument, after having seen the impossibility to remove all cancerous metastases. Complete relief from all gastric symptoms and she left the hospital three weeks after the operation more grateful than any patient I ever saw before. Some time after she had left the hospital I heard that she was feeling well and relishing nearly all kinds of food.

CASE 6.—Mrs. S., 43 years old. Symptoms of pyloric stenosis and palpable tumor in epigastrium. Diagnosis: pyloric cancer. Wished to be operated on to get relief. Operation revealed a pyloric cancer, making resection impossible on account of numerous metastases. Anterior gastro-enterostomy and entero-anastomosis. Complete relief from gastric symptoms. Latest news from her, about six weeks after the operation, reports everything all right.

CONCLUSIONS.

Any kind of lateral anastomosis is rapidly performed, about one-half hour being generally sufficient. The size of the anastomosis opening can be made larger or smaller, as the need may be, by pushing the blades more or less deeply into the bowel before the forceps are locked. Leakage of visceral contents during the operation is, with ordinary care, nearly impossible.

With the instrument in the bowel the sewing can be done with ease very rapidly and substantially. It leaves no foreign body in the bowel to be expelled afterwards. A surgeon with limited experience in intestinal work can, with this instrument, perform lateral anastomosis with comparative safety.

Post-operative hemorrhage from the stomach is prevented by crushing of the tissues with the forceps, by the suturing and the cauterization of the cut edges. No hemorrhage has so far occurred in any of my cases.

ETIOLOGY AND TREATMENT OF CHRONIC CYSTITIS.

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OMAHA.

Comparatively little work has been done in the last ten years on the scientific investigation of cystitis. Some, however, has been done which is very valuable, and from it I shall take the liberty of drawing very freely.

ETIOLOGY.

The etiology of cystitis is essentially a bacteriological problem. The germs most frequently found are, in order of frequency, colon bacillus, streptococcus, staphylococcus in several species, typhoid bacillus, gonococcus of Neisser, proteus vulgaris and the tubercle bacillus. The fermentation of the urine has been shown by Melchior and Muller to be rather a result of infection than a cause of cystitis, certain germs producing ammonium carbonate from urea, thus converting the urine into an ammoniacal substance, giving an alkaline reaction. The chief germs which do so are the micrococcus of urea, species of the pyogenic germs, and occasionally the colon bacillus and *Proteus vulgaris*. It will be found in a goodly number of cases—perhaps one-half—that the urine is acid and we may still have the evidences of cystitis present. In most text-books is found the statement that in chronic cystitis the reaction of urine is alkaline. Melchior's work develops that a great majority of cases of chronic cystitis are acid. Robert Tyler[1] says that "in the majority of cases urine is acid." Brown[2] of Baltimore says "contrary to the opinions expressed in the majority of text-books, a great majoritv of the infections of both bladder and kidney are associated with acidity of urine—i. e., are due to micrococci, which do not split up the urea." Young[3] of Baltimore holds the same opinion.

In our own experience in sixteen cases of chronic cystitis we have found the urine to give an acid reaction in ten cases and alkaline in the others. Rovsing[4] in thirty cases found only three acid and the remaining alkaline. The gonococcus, the bacillus of tuberculosis, the colon and bacillus all seem to develop and grow best in an acid urine. It is, therefore, a plain fact that since in cystitis we have various infections, it is well to study with care the bacteriologic reactions in each separate infection and the character of treatment which is most often of value to a particular infection. Before treating a case of chronic cystitis I should desire to know the reaction of the urine and the principal germ present. Occasionally there may be several infections at the same time. However, one is usually predominant and, I think, by ordinary plate growths, it can be readily segregated.

We must not forget, however, the other side of the problem, viz.: That we can have the bladder subject constantly to infection and still have no cystitis present. The urine is the avenue for excretion of many forms of infection from the tissues of the body. It is only a perfectly aseptic fluid when it is perfectly normal, and it is perhaps rare that it is perfectly normal, so that the bladder is constantly subjected to infections of all kinds, but only occasionally does the infection lodge. It is difficult for a germ to lodge and grow on the squamous epithelial cell of the fundus of the bladder and also nearly as difficult on the transitional cells of the base of the bladder. We must, therefore, have other abnormal conditions present besides the actual presence of germs.

Reymond[5] has shown that an infection may travel from the tubes and uterus and develop a cystitis. Melchior has demonstrated that they may pass from the rectum through the bowel and cause a cystitis. The presence of foreign bodies, as is well known, may cause a cystitis, e. g., stone; retention of urine as behind an enlarged prostate; a bladder which is poorly nourished; certain spinal diseases, blows, falls and injuries in the region of the bladder, all have a predisposing influence toward the production of cystitis, but these may exist and without germs we will not have cystitis. Germs may enter the bladder in several ways: *a*, from the kidneys; *b*, urethra; *c*, by unclean instruments; *d*, from tubes, uterus and rectum; *e*, by the blood; *f*, by the lymphatics.

1. Medical News, 1896, vol. lxviii, p. 669.
2. New York Medical Journal, August, 1901, p. 391.
3. Johns Hopkins Bulletin, January, 1901.
4. Blasen-Entzündungen, Berlin, 1890.
5. Annales Mal. des Organ, 9, April, 1893.

Dividing the etiology of cystitis for purposes of description into predisposing and exciting causes, we have as exciting causes the various germs above mentioned, and as predisposing causes the mechanical and chemical irritations above tabulated.

TREATMENT.

In treating all cases of chronic cystitis we must first consider the predisposing cause or causes. If the predisposing cause is extravesical in the beginning it is hard to cure it by intravesical treatment. The external cause must be carefully considered. If we find a prolapsed bladder or an enlarged prostate we can not hope to permanently cure the resulting cystitis unless the condition producing it is removed. Belfield always claims cystitis to be only a symptom of some other disorder. This is a very good point to consider. But, when the infection once has gained a hold in a bladder it is necessary that it should be treated itself, even though the predisposing cause may have been removed, for the infection in a bladder having obtained, it is as resistant to limitation or cure as it was difficult to gain a hold in the first place.

The treatment may then be classified under the following heads: *a*, internal medication; *b*, washing bladder; *c*, instillation into bladder; *d*, topical application; *e*, stretching bladder (Young); *f*, operation.

The character of the medication must depend upon the reaction of the urine. If it is acid, a drug converting urine into an alkaline reaction is called for. Urotropin and benzoic acid are the best form of drugs for a cystitis which gives an alkaline urine, and are of very little value in a case where the urine is already acid. It is a fairly good rule to follow that if a germ lives and flourishes in an acid medium, its growth will be retarded, if not destroyed, in alkaline media, and vice versa. On this theory we must proceed in internal medication for chronic cystitis. We have not time to discuss in detail the different remedies and their use, only to condemn the indiscriminate use of urotropin in all forms of cystitis. It should be used only in those cases producing alkaline urine. Locally, it has been our custom to proceed as follows: An infected bladder is washed out with a saturated solution of boric acid until the solution returns clear. This may be done through a return current catheter. But if this can not be introduced without pain, as over an hypertrophied prostate, a rubber catheter or lisle thread catheter may be used. The latter is often the best. Fill up the bladder under hydraulic pressure of about two or three feet, until it is painful. Repeat several times until the fluid returns clear. In the cystitis of gonorrheal or pyogenic origin we then instill into the bladder a 1 to 5000 silver nitrate solution about once in three days and in bulk about 30 c.c., increasing the strength until it becomes too irritating, reaching a strength of 1 to 200 in some cases.

In infections from the colon and tubercle bacilli we have found mercuric chlorid to be a very efficient remedy to instill into a bladder which has been washed out clean by some good antiseptic. We use about 30 c.c. of a 1 to 20,000 solution, putting it into the bladder once in two or three days as the irritation seems to allow, gradually increasing in strength. This should never be used in gonorrheal cystitis nor silver nitrate in the tubercular form. In tubercular cystitis we have often obtained good results from instillation of about two drams of a 10 per cent. solution of iodoform in glycerin, used in the same manner as above. We would not recommend the use of potassium permanganate in any case in the bladder. If this method does not succeed we proceed to drain by surgical interference.

Perineal drainage is generally superior to suprapubic drainage in all cases except it be for the presence of a stone or some foreign body which can not be removed by the perineal route. In woman it is rarely necessary to drain the bladder, but when necessary it can be done through the anterior vaginal wall. Then by good drainage and the usual washings and hygienic after-treatment and perfect rest when possible, we can hope for good results.

The purpose of this paper is, therefore, to impress the value of a careful consideration of the bacteriology of chronic cystitis, and to urge a rational treatment for the same.

Clinical Report.

A UNIQUE CASE OF VESICAL CALCULUS.

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AND
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James Trimble, Co. D, 63d Pennsylvania, aged 62 years, says he was wounded at the second battle of Bull Run, Aug. 29, 1862, while in a kneeling posture, by a ball which entered the inner side of the left thigh about five inches below the groin. A puckering cicatrix verifies his statement. He says he was treated in the army hospital, where futile efforts were made to locate the ball; that the wound healed uninterruptedly, and that he was soon enjoying his usual good health.

During January, 1902, he commenced to have vesical derangement and was troubled more or less until July 30, 1902, when he was admitted to hospital with retention of urine. An attempt to catheterize him was made, but was unsuccessful; the catheter could not be passed beyond the prostatic portion of the urethra, where it met a hard resisting substance. On palpation, a hard tumor about the size of a walnut could be outlined at the base of the penis.

A diagnosis of vesical calculus was made and lithotomy decided on. Suprapubic lithotomy was performed July 31 and a calculus with a flattened lead musket ball nucleus was removed. Considerable difficulty was experienced in removing the calculus, as it was encysted in a cul-de-sac near the neck of the bladder. It could not be removed with stone forceps and had to be extricated by introducing the fingers into the bladder. When the calculus was extricated a considerable quantity of pus was liberated from an abscess cavity which had formed at the left side of the calculus. The calculus and ball weighed 580 grains.

When did the ball enter the bladder? It probably was not in the cavity of the bladder prior to the beginning of the trouble in January, for up to that time he had had no symptoms indicating its presence. It could not have penetrated the bladder wall at the time of receiving the wound, or there would have been an extravasation of urine into the pelvic cavity with dire results.

The rational conclusion is that the ball began its passage through the bladder wall at the time of the appearance of the first vesical symptoms in January and succeeded in penetrating the wall by the slow process of ulcerative absorption.

At the time of the operation, the patient was somewhat weak and emaciated, but withstood the operation very well.

This case is unique in that the time intervening between the reception of the wound and the presentation of the symptoms was forty years.

Physicians and Politicians.—If medical men paid more attention to politics politicians would pay more attention to medical men's interests.—*Alienist and Neurologist.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street :: :: Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, SEPTEMBER 27, 1902.

EPILEPSY AND RESPONSIBILITY.

As our knowledge of nervous and mental diseases has developed there has come the realization that the present popular state of feeling as to intentional malicious actions, and especially the interpretation and application of the laws with regard to crime, must undergo a decided modification, if a system of injustice in the name of right is not to be perpetuated and serious wrong done with short-sighted good intentions. This has become manifest in nothing more perhaps than in the gradual evolution of our knowledge of epilepsy. The generally accepted ideas as to the criterion of right and wrong in others' actions fall before the observed anomalies as to moral responsibility occurring in this protean disease, for the study of which modern life is providing so many opportunities that fortunately are not being neglected by our generation. From it come some of the most valuable practical lessons of modern psychiatry. Hundreds of years of study of free will in the abstract have not given so much real knowledge on this subject as the last twenty years of careful observation of the phenomena of conduct in connection with the varying diseased mental states of the epileptic. Here, as in so many other departments of anthropology, pathology has stepped in to supplement the knowledge gained from supposedly more positive sources, and has supplied a key to at least part of the mystery that was so shrouded in obscurity before.

The change of thought on this important subject has come so quietly that many of us are hardly aware of it. It constitutes, however, one of the most practically important features of modern medical progress, especially as on medical men must devolve the propaganda of the newer ideas in order that they may produce their due impression in the minds of our generation and be reflected in our legislation and the interpretation of existing laws. The legal standard of criminal responsibility so often judicially assumed even at the present time is that the knowledge of the distinction between right and wrong constitutes the essence of punishable malice when materially criminal acts are committed. This old-time criterion must give way before the declarations of psychiatrists, that the intelligence of epileptics may be unimpaired, yet the emotions and volitions be so disturbed as to be at times beyond the patient's control.

In an article[1] on epilepsy and its relation to crime, read before the Rochester Academy of Medicine, Dr. William P. Spratling illustrates by selected cases the fact that it is not the continuously insane epileptic that is liable to commit crime, but the patient who has long, perfectly lucid and responsible intervals, that may at any time, however, be interrupted by the irresponsible phase of the disease, yet without the slightest preliminary symptomatic warning to betray it. When the attacks of epilepsy, instead of being of the classic motor type, are what is known as "psychical epilepsy" or the "psychical epileptic equivalent," then the appreciation of the amount of the responsibility involved in a given act becomes one of the most difficult problems with which the alienist has to deal. Spratling does not hesitate to declare that established proof of the presence of the psychical epileptic equivalent ought to settle the absence of responsibility beyond reasonable doubt. When we consider that epilepsy must have a beginning, that it sometimes only asserts itself late in life, that not infrequently, until some great emotional strain calls out an exaggerated exhibition of the stigmata of the neurosis, it may have produced symptoms so slight as to escape the notice of any but a most expert observer in such matters, it can be seen how cautiously judgments as to responsibility must be made. How many people there are who have queer moods into which even friends do not inquire too closely. The intricacy of this problem of moral responsibility takes on additional difficulty of solution as progress of knowledge shows the increased possibilities of imperative or uncontrolled pathologic conditions assuming sway over the individual in the midst of apparent mental health.

The opinions thus expressed are an echo of what psychiatrists have been insisting on for some time. Kraepelin may be taken as the representative of progressive German psychiatry in this matter. His opinion as stated by Defendorf[2] is that "in more than half the cases (of epilepsy) intellectual activity is impaired, though proportionally to a less degree than the emotions or volitions." In a word, there is a distinct tendency to that moral insanity whose independent occurrence has often been disputed. This renders accountability almost minimal in many cases, and its recognition would do away with most of the false legal maxims that now unfortunately hamper the true course of justice.

Many of the ideas that are now confined to specialists in mental diseases will have to become common property before a change in the legal status of the irresponsible can be looked for. It is the plain duty of medical men generally to see that proper notions on these subjects become widespread in order to lead up to such modification of present-day persuasions as will be worthy of the stage of culture of our generation.

1. Journal of Nervous and Mental Diseases, August, 1902, p. 481.

THE UNHEALTHFUL LONG SKIRT.

The German correspondent of the *Medical Press and Circular* in a recent issue tells of a Teutonic crusade against the corset and the trailing skirt, which he con-

2. "Clinical Psychiatry," A. Ross Defendorf. Macmillan Co. 1902.

siders has, like the French anti-alcohol agitation, come to stay. It is encouraging to learn this, for it is not long since that we heard that in German society it was considered almost immodest for a woman to dispense with the corset. It seemed to be considered a sort of defensive armor against masculine arms. The corset has long been under medical condemnation, and we do not believe that the women of the present day suffer so severely from its effects as did their ancestresses, though the fashion-plate ideals are bad enough yet. It can even be considered in some special cases and in some of its modifications as having a utility, but it is hard to find how to say a good word for the trailing skirt. Indoors it is a somewhat perilous sacrifice of hygiene to conventional esthetics, but on the street it is in every sense an abomination. With the old-fashioned way of letting it sweep the sidewalks and crossings its untidiness was alone enough, one would think, to disgust women into its disuse. At the present time it is more the fashion to occupy one hand in holding it up behind, a very ineffectual method of securing either cleanliness or hygienic safety, and certainly inconvenient enough it would appear. Moreover, the bodily twisting it requires tends to produce deformity and should the practice continue long enough we may expect to see the female half or more of our species become generally one-sided, with hypertrophied latissimi dorsi and spinal curvature. No man, or woman either, can complacently anticipate such a result, and, moreover, there is nothing really becoming or graceful in the practice, but rather the reverse. It seems as if it might be an effect of a dissemination of a knowledge of the germ theory of disease, and perhaps we may hope that a spread of information as to the deforming possibilities of the present popular custom will be the last straw that will break the camel's back of fashionable slavery to the trailing or posteriorly uplifted skirt.

Esthetically as well as hygienically the abbreviated walking skirt is far ahead, and this fact appears to have been appreciated in one, at least, of the two national dressmakers' conventions lately in session. It is hardly to be expected that health considerations simply as such would carry things in such a body. A plea was made for the short petticoat, and perhaps in our ignorance we assume that this implies or includes also more brevity of the outer lower garment, on the ground of its conducing to greater gracefulness in walking. Our opinion on this point is sufficiently made clear by what has been said, and we believe most of the male sex share it; it is therefore some satisfaction to find that the professional or commercial arbiters of fashion are of a similar mind.

Of course, to us professionally the health considerations are first, but we are glad to recognize any aid that may be available for the good cause. Anything that will make less urgent the perennial cry for reform in woman's dress, especially as regards the trailing skirt, ought to be most welcome.

DISCRIMINATION IN PHYSICAL CULTURE METHODS.

The large amount of expensive advertising which is done nowadays by the propagators of various physical culture systems betokens a patronage considerable enough to pay for the outlay and probably a handsome profit besides. Considering the fact that the teachers of these various systems, either by personal direction or by correspondence, set individuals at vigorous physical training which often has no relation to the person's peculiarities or physiologic needs, it follows that not a little harm may be done, and that, therefore, the subject merits the attention of physicians who may sometimes be consulted in the matter.

It is one thing to say, as a general statement, that people do not exercise enough, but it is quite a different matter to start them on the task of building their muscular system after the model of the athletes whose pictures appear so regularly in the advertising pages of our magazines. Exercise certainly is desirable for the furtherance of active metabolism, of good repair and excretion of waste materials, but large muscles in this day and generation serve little purpose indeed. In developing an exaggerated muscular system it is quite possible to sap the vitality. Men of experience in physical training not rarely see individuals with large muscles well used and yet with poor general health. And large muscles, once obtained, must be lived up to or else, like other unused organs, by their very existence they will render one more prone to disease.

Another point open to criticism is the method itself by which is taught the attainment of athletic proportions. The much advertised systems of working without gymnastic apparatus amount largely to the scheme of offering resistance to one set of muscles by the contraction of an antagonistic set. As Dr Sargent, the well-known head of the Harvard School of Physical Training, writes in a letter, this "is anything but physiologic. How to relax antagonistic muscles, not how to contract them, is the desideratum." Whether we are desirous of attaining greater facility in the use of any given muscles or whether we are aiming at the better metabolism which increased circulation of blood and lymph brings, this statement of Sargent's seems obviously true. Then, too, the get-strong-quick phase of these advertised methods must necessarily result in the acquiring of impermanent strength and surely cause a harmful strain on any circulatory apparatus unaccustomed to much physical exertion. We do not hesitate to say that harm will be done by the methods of directing exercise on the basis of muscle measurements, especially when this exercise is taken indoors.

However, it must be confessed that through these advertised "systems" there has been aroused much popular enthusiasm for exercise among the men and women who need it most, and this of itself is good. The subject has been too little touched on by the most competent authorities in ways that might help to form safe opinions for both physician and laity.

REGULATION OF VENEREAL DISEASE.

We present this week a portion of the proceedings of the International Conference for the Prevention of Syphilis and Venereal Disease, recently held at Brussels, and the report will be completed in our next issue. As perhaps might have been expected, no very definite statement of policy was agreed on; the differences of opinion were not less marked than at the earlier congress three years ago. It is evident that absolute agreement as regards the questions of regulation of prostitution is still far off, and that neither this congress nor perhaps many future ones will end the discussion.

The agitation of moral questions will never be successfully suppressed, and as the world progresses they are becoming still more important factors in our civilization. There is one here involved that will not be readily downed, and which—even if regulation were an unqualified success, which admittedly it is not—would still arise to trouble its advocates. Some legal measures do seem possible, however, and it may be that both sides may yet come together in regard to some points of public prophylaxis. For example, the notification of venereal disease and the application of legal penalties for communicating disease to innocent parties are practicable to a certain extent and should be enforced.

It seems a question to us, in spite of the opinions favored in the conference, whether the ordinary restrictions of medical secrecy should apply to their full extent in case of venereal disease; at least it should be permissible to warn innocent victims against exposure. It does also appear that some practical police regulation and sanitation without any legal recognition of the evil might be possible and have some good effect in seaports and in connection with military garrisons, and that this might be made compatible with earnest effort to suppress it as far as possible.

Nothing should be done that will encourage a feeling of safety in immorality, and here comes the difficulty in the case. In fact, the difficulties multiply with the consideration of the conditions, and the position of the abolitionists of no compromise with the evil is really the only consistently logical one after all, whatever one may think of its practical application. There is no question, of course, as to the value of moral and educational measures, and in these we have our greatest hopes. Whatever is done should not be such as would in any way lower our moral ideals. No community is ever better than its ideal, and the lower this ideal the more probable is its moral degradation.

NASAL THERAPY FOR DYSMENORRHEA.

Five years ago Fliess published a monograph on the connection between nasal and menstrual conditions, the main thesis being that in the nose there are two "genital spots," one the tuberculum septi and the other on the inferior turbinated, which in many women show congestion and sensitiveness during menstruation. In some cases of severe dysmenorrhea Fliess found he was able to control the pain by application of cocain to these "spots," and more rarely he permanently cured the menstrual difficulty by cauterization of the same region.

The idea of relationship between the upper respiratory tract and the genital organs in woman is much older than the contribution by Fliess. Bleeding from the nose and pharynx during menstruation has often been noted, and the same periodic phenomenon has been recorded in cases of amenorrhea caused by pregnancy, the menopause, or pathologic conditions. Since the publication by Fliess of his findings the subject has been discussed at length in some Continental medical societies and has been reported on by a number of clinicians, all of whom seem to find a certain percentage of cases amenable to this treatment. Schiff found cocain effective in 35 out of 41 cases, and concluded that it was of service in those cases where the pain persists after the flow is well established. Koblanck, Ruge, Knorr and Krönig have all reported series of cases favorably affected. More lately Ephraim[1] has been successful in arresting the pain of intense dysmenorrhea in 18 out of 24 cases treated by cocain. In Amann's clinic Linder[2] has been studying this subject for the last two years on a series of 30 cases. The relief from pain has been so marked that some of the patients have returned to have other painful disorders treated.

The influence of suggestion in rendering this treatment effective has been discussed time and again and proves a difficult question to decide. Schiff carefully undertook to rule out this factor and found that applications of water were ineffective. Linder reports a special series of 16 cases selected with great care in order to test more exactly this nasal therapy. In 10 of these cocain caused cessation of pain, sometimes lasting 24 hours. When the pain had returned Linder tried a second application, this time secretly substituting plain water for the cocain solution. Two of the 10 were again favorably affected. Repetition of the cocain treatment then proved effective in all cases. Linder is forced to think that in some instances suggestion is the strongest factor in the result, although it must be remembered that even water causes physiologic effect on the nasal mucous membrane. For him the question of a nasal dysmenorrhea remains *in suspensio,* but the striking number of cases which are relieved by nasal therapy, which is harmless whether or not it involves suggestion, recommends a method which ought to be equally welcome to physician and patient for the treatment of such an obstinate disorder. The cocain is applied on a pledget of cotton through a speculum, 2 or 3 drops of a 10-20 per cent. solution, and is carefully limited to the "genital spots," so that there is no danger of intoxication. To be effective it may have to be repeated in 15 minutes. The cessation of pain, even if for only overnight, is extremely grateful to the patient. Cauteriza-

1. Allg. Med. Cent.-Ztg., March 12, 1902. (Abst., JOURNAL A. M. A., April 5.)
2. Münchener Med. Wochenschrift, June 3, 1902.

tion, in the experience of several men, permanently cures far fewer cases of dysmenorrhea than cocain temporarily relieves.

ANOTHER STATE SOCIETY JOURNAL.

At its last annual session the Michigan State Medical Society decided to replace the annual transactions by a monthly journal. The initial number is before us, bearing the title of "The Journal of the Michigan State Medical Society," and is a credit to the society and to the officers who have the journal in charge. There are thirty-six reading and twelve advertising pages. Dr. A. P. Biddle, the efficient secretary of the society, is the editor.

DISINFECTION VS. VACCINATION.

Last February the health officer of the city of Cleveland published his account of "How Cleveland was Rid of Smallpox," a paper that has attracted considerable attention, especially among the laity (it was published in a popular magazine as well as in a medical journal), on account of its apparent magnification of the value of disinfection in the prophylaxis of this disease. THE JOURNAL has already noticed[1] the sanitary misconcepceptions to which it gave rise, and more recently the Ohio State Board of Health, in its August-September bulletin, takes up the subject and shows how really inefficient the disinfection procedures were. The *Cleveland Medical Journal* for September also takes up the question, speaking with the authority of one on the ground, and shows that the local epidemic was practically at an end when the present health officer went into office. He simply gave the corpse a kick by this showing and his claims for the efficiency of disinfection. The stir that has been made over it by the anti-vaccinationists has about as much basis as that on the utterly fictitious data they sometimes use. The subsequent recrudescence of smallpox in Cleveland in spite of disinfection ought to be an object lesson, but, of course, it will weigh nothing with the extremists who will still parade Dr. Friedrich's antisepsis as a conclusive evidence that smallpox is only a filth disease and vaccination a failure. It is to be very much regretted that the Cleveland health officer does not more explicitly repudiate any intention to overvalue disinfection at the expense of vaccination; his (unsigned) letter to the secretary of the State Board of Health, while it is practically a surrender of any special claims, yet has the appearance of avoidance of direct statement to that effect. The whole affair is an unfortunate one for him and he ought to spare no pains to correct the false impressions his imprudent publication has created.

MALIGNANT DISEASE OF THE VERMIFORM APPENDIX.

It will not be denied that the one certain means of preventing recurrence of appendicitis is removal of the offending organ. There are still a considerable number of practitioners, however, who adhere to medicinal treatment for the attacks, but who also realize that recurrence may take place at any time. The difficulty of the situation and the danger from nonsurgical intervention resides in the fact that no one can determine in advance the nature of an attack and its mode of termination, so that the vast majority of clinicians have come to believe that the risk of operation is to be preferred to the uncertainty of outcome without surgical intervention. An additional factor that must be taken into consideration in this connection is pointed out by Drs. R. H. Harte and R. N. Willson,[1] namely, the possibility of malignant disease of the appendix giving rise to symptoms of inflammation of that organ. They report two cases of this character in which the disease was limited to the appendix, and refer to 16 others of the same kind, collected from the literature, and also to others in which, while the appendix was the primary seat of the disease, extension had taken place to adjacent tissues. All of the cases in which it appeared probable that the disease was limited to the appendix presented the symptoms of ordinary relapsing appendicitis, but in none was the true state of affairs suspected. In some a small tumor was present, but this was mistaken for a concretion in the lumen of the appendix until the latter was laid open. In others there was no macroscopic evidence of new growth. In one there was extensive suppuration with adhesions and a perforation in the appendix. Existing statistical evidence tends to show that malignant disease of the vermiform appendix is rare, but the large majority of the cases have been reported within recent times, so that it may be inferred that the disorder will be detected with greater frequency as the practice becomes more common of examining histologically appendices removed at operation or after death. In explanation of the formation it is suggested that it is the result of a primary inflammation long present and semi-quiescent, but breaking down the resisting power of the tissues in connection with some unusual disturbance in the general or local nutrition.

INTRAVENOUS INJECTIONS IN RABIES.

At the present time no one fully informed and free from prejudice doubts the efficacy of the Pasteur treatment for rabies. In the Pasteur Institute in Paris the number of deaths of the cases treated during the past fifteen years has been less than 1 per cent. For the year 1901 there were five deaths in 1,321 cases treated, that is, a mortality of 0.38 per cent. It is acceded by those especially interested that a more intensive method of treatment than the present is highly desirable in order to avoid the rare failures, and in order, if possible, to achieve better success than now in the cases which come under treatment a long time after the infection. Recently Krasmitski[2] has experimented with the intravenous injection of the virus of rabies used for immunization. He finds that such injections are not especially dangerous, provided that the virus is in emulsion, filtered and well diluted, and that the fluid is heated to 37 degrees. Such intravenous injections produce a more substantial immunity more rapidly than the usual means of vaccination. In the rabbit, for instance, which is the most susceptible animal, such injections may prevent death from intracranial inoculation of the virus which is other-

1. Issue of May 3, 1902, p. 1365.

1. Medical News, Aug. 2, 1902, p. 193; see THE JOURNAL, Aug. 16, ¶15, p. 397.

2. Ann. de l'Institut Pasteur, 1902, xvi, 393-417.

wise always fatal. Experiments have been made also on human persons bitten by rabid animals, especially in grave cases. These experiments showed the harmlessness of the method in man and also an apparent increased efficacy. On the whole, the results seem to be distinctly encouraging, but further work and observation are necessary in order to determine the exact value of this new form of Pasteur treatment. During the summer months especially cases of fatal hydrophobia are not rare in our cities and elsewhere. These are cases that from neglect or ignorance or inability have failed to avail themselves of the opportunities offered for Pasteur treatment by various institutions in this country. No doubt a thorough study of the occurrence of hydrophobia in the United States and its fatality would reveal that the disease is more frequent and more destructive of human life than we have believed or realized. In a country so large and so rich as this there ought to be established several institutes of a public character for the treatment of rabies. France now has half a dozen such institutes scattered in various centers. The private institutions now existing in this country are doing good work no doubt, but it would hardly be expected that they should reach the highest degree of scientific efficiency without direct financial support, either by the state or by endowment. Furthermore, some sort of propaganda should be started from time to time in order to keep alive among the people the fact that after bites by animals supposed to be rabid or actually rabid safety only lies in prompt resort to the Pasteur treatment.

Medical News.

COLORADO.

Mortality.—During August 836 deaths were reported in the state, a mortality of 17.14 per 1000 per annum. Typhoid fever caused 51 deaths, diphtheria 17, and scarlet fever 2.

Typhoid Increase.—Colorado had 644 cases of typhoid fever in August, an increase of 415 over the previous month. Denver had 148 cases and Arapahoe County a total of 156 cases.

Personal.—Dr. A. A. Blackman has returned to Colorado Springs, after a visit of two months in Japan.——Dr. Claude E. Cooper, Denver, has been appointed a member of the State Board of Health, vice Dr. George E. Tyler, deceased.

Millions for the Sick.—By the will of the late W. S. Stratton $1,000,000 is left to build the Myron Stratton Home for Sick Persons in Colorado Springs, and the balance of the estate, after payment of bequests, is to be used for the maintenance of the institution.

ILLINOIS.

A Western Bloomingdale.—It is announced that Dr. Henry J. Brooks, after several years of arduous labor, has succeeded in interesting capitalists and physicians in the establishment of a great hospital for the insane, modeled on the lines of that at Bloomingdale, N. Y. A large sum is said to have been pledged and several prominent alienists of Chicago have expressed their approval of the scheme. The profits are to be devoted to the care of indigent patients.

Personal.—Dr. William G. Bechtold, Breese, had a peculiar accident, September 10, whereby he lost the terminal phalanx of his right forefinger. He was sponging his horse's mouth, when the animal sneezed, closing his teeth over the doctor's finger, completely severing it.——A farewell dinner was given by twenty physicians of Champaign and Urbana, on September 19, to Dr. J. Ora Pearman, who is about to move from Champaign to Mahomet.——Dr. Everett H. Butterfield, Ottawa, has been re-elected physician of La Salle County.——Dr. and Mrs. Frank J. Mittan, Colfax, who are about to move to California, were presented by their friends in Colfax with a set of solid silver spoons, knives and forks, September 10.

Chicago.

Midwife Fined for Practicing Medicine.—Mrs. Paulina Taeschler, a midwife, was fined $200 by a jury in Justice Everett's court, September 18, for practicing medicine without a license. The woman operated a private maternity.

Personal.—Dr. Thomas A. Woodruff, editorial secretary of the *Ophthalmic Record*, has been elected professor of ophthalmology in the Chicago Eye, Ear, Nose and Throat College.——Dr. and Mrs. Albert B. Hale have returned after a summer abroad.

Illinois Medical College Commencement.—The annual commencement exercises of this college were held at Handel Hall, September 25, a graduating class of 34 receiving diplomas. The doctorate address was delivered by Judge John Barton Payne. The annual banquet took place at the Auditorium Hotel in the evening.

Transferred to University.—The College of Physicians and Surgeons, now the medical department of the University of Illinois, has conveyed to the latter the old West Division High School property at Ogden avenue and Congress Street, which it acquired from the city last year. The consideration named in the transfer was the same as in the deed from the city, $186,000.

Typhoid Decreasing.—The typhoid mortality has fallen from 10.5 per cent. of the total mortality during the first week of September to 7.8 per cent. last week. The typhoid deaths for the three weeks of the month have been 55, 43 and 38 respectively, and although there were 18 more cases in the County Hospital at the close of the week, there is every reason to believe that, if the precautions so generally enforced during the past six weeks be continued until cold weather sets in, there will be nothing more than the usual seasonal increase of the disease during the remainder of the fall.

Comparative Mortality.—The 487 deaths from all causes reported during the week ended September 20, represent a yearly mortality of 13.83 per 1000 of population, as compared with 14.13 the week previous and 12.68 in the corresponding week of 1901. The excess, as compared with last year, was chiefly from chronic diseases unfavorably affected by low temperature. Thus Bright's disease carried off 25 victims, or nearly double the number (14) in 1901; consumption 76, as against 33; pneumonia 43, as against 32; from the same cause the deaths among the aged were also increased—92 deaths of those over 60 years last week, and 76 in the corresponding week of last year.

Alpha Omega Alpha Society.—Very recently there has been organized in the senior class of the College of Physicians and Surgeons what the organizers believe to be the first honorary society in a medical school in this country. It embodies features not unlike the Phi Beta Kappa Society in literary colleges. It resembles much more closely, however, the Skull and Bones Society of Yale because of the high general standard required. Not more than 15 juniors will be elected to membership, and the remainder to be chosen out of that class will be elected by these members in their senior year. Not more than 30 names are to be considered for election from any one class of over 200 students, and the proportion can never exceed one-sixth of the class. The constitution will allow chapters in other medical colleges of the highest standing only, and honorary members may be admitted, who shall in every case, be men or women eminent in the profession. The object of this fraternity is to maintain a high standard of thought and action in medical schools and in the profession, and to endeavor to encourage the high ideals supported by earnest students and practitioners everywhere.

MARYLAND.

Baltimore's Deaths.—For the week ended September 20, the deaths were 193. The typhoid deaths numbered 9, the same as last week, but only 71 new cases of this disease were reported. Consumption increased in mortality to 31, and pneumonia to 11.

Alleged Abortionist Imprisoned.—Dr. William B. Hawkins, who forfeited his bail by failing to appear for trial last February on the charge of causing the death of a woman here by criminal operation, was arrested September 18, in Philadelphia, and is in jail in Baltimore.

New Sanatoria.—Drs. George W. Todd and J. McFadden Dick have formed a stock company for the purpose of building a sanatorium at Salisbury, opposite the Peninsula General Hospital. This is the first institution of the sort on the eastern shore of Maryland.——The Maryland Quarter Club has col-

lected $2300 towards the erection of a sanatorium in the mountains of Maryland for the treatment of consumptive patients.

Personals.—Dr. Howard A. Kelly has given $10,000 for the extension of the gynecologic ward of the Johns Hopkins Hospital.——Dr. J. L. Truax has gone on a trip to Newfoundland. ——Dr. J. W. C. Cuddy has been appointed clinical professor of dermatology in the Baltimore University.——Drs. George J. Preston, R. B. Warfield and John H. Grimes have returned from Europe.——The Health Commissioner has appointed Dr. Albert D. Driscoll one of the health wardens.

May Start Laboratory.—Dr. Franklin P. Mall, professor of anatomy in the Johns Hopkins Medical School, Baltimore, has returned from New England where he passed the summer. During most of his vacation he was busy with professional studies on the island of Little Chebeague, in Casco Bay, where he devoted himself to study of the human embryo and investigation of the habitat of the salt-water clam. His discoveries in the latter direction are said to have a commercial bearing. Other Hopkins men who go to the same place are Drs. Harmon Morse, professor of chemistry; W. H. Howell, professor of physiology, and R. G. Harrison, associate professor of anatomy. The congregation of so many Hopkins men at one place has suggested to them the erection of a small laboratory on the island of Great Chebeague for private research during the hot weather.

MISSOURI.

Medical Students Dine.—About 150 students of the Kansas City Medical College were guests at a dinner given by the faculty, September 16, in honor of the opening of the college year.

Personal.—Dr. William H. Mayfield, St. Louis, has been in Colorado Springs, endeavoring to secure a site for a sanatorium for consumptives, to be established under the auspices of the Saturday and Sunday Hospital Society of St. Louis.——Dr. Samuel H. Headlee, St. James, celebrated his semi-centenary in medicine, September 2.

Proposes Permanent Hospital.—Dr. Leonidas H. Laidley, medical director of the Louisiana Purchase Exposition, offers the suggestion that the Stillman Infirmary idea be used in the building of the Exposition Hospital. He believes that some philanthropist might be found who would aid the plan so that the hospital could be made permanent, with its endowment, to carry out the plan of the Stillman Infirmary for sick students attending Washington University. The suggestion carries with it the inference that the World's Fair Hospital would be erected on the Washington University tract of the Exposition site, remaining there after as a corporate part of the university ground.

Levering Hospital Staff.—The medical staff of Levering Hospital, Hannibal, held a meeting September 9, and organized by the election of the following officers: President, Dr. John N. Baskett; secretary, Dr. F. Janet Reid. The following assignments were made: Consulting physicians, Drs. Stephen G. Smith, and Richard Schmidt; attending surgeon, Dr. Thomas C. Chowning; consulting surgeons, Drs. Henry L. Banks, and John J. Bourn; attending obstetrician, Dr. Henry L. Banks; consulting obstetricians, Drs. Stephen G. Smith, and F. Janet Reid; attending gynecologist, Dr F. Janet Reid; consulting gynecologists, Drs. Stephen G. Smith, and Thomas C. Chowning; oculist and aurist, Dr. Edward T. Hornback, and pathologist, Dr. John N. Baskett.

NEW MEXICO.

New Sanitarium in Santa Fe.—Sister Ursula, superior of St. Vincent's sanitarium, Albuquerque, is planning to commence the erection of a new sanitarium in Santa Fe about April 1, 1903.

St. Joseph's Sanitarium.—Albuquerque now has a model sanitarium, complete in every detail, large enough to meet the requirements of a large city, and furnished with the most improved equipment for hospital service. It has been erected at a cost of nearly $50,000. The operating rooms were equipped by the Bernalillo County Medical Association.

Tent City for Consumptives.—A tent city for consumptives is to be established in the suburbs of Santa Fe. A tract of land has been bought in the foothills southeast of the city, with southern exposure, whereon will be laid out a model tent city, with water supply, electric lights, telephone, sewer, etc., to be a sanitarium on a new and large scale. A number of New York health-seekers have already applied for tents.

Sanatorium at Silver City.—The new wing of St. Joseph's Hospital, Silver City, which is to be used exclusively as a sanatorium for the treatment of pulmonary tuberculosis, has just been completed. The administrative work is in the hands of Dr. Earl S. Bullock, the bacteriologist first assigned to Fort Bayard by the medical department of the United States Army, and under his guidance there has been a gradual growth of the work. The accommodations soon became limited and with characteristic energy the Sisters built the addition to the hospital just opened, which is designed for ambulant patients.

NEW YORK.

Buffalo.

Term Opens.—The medical department of the University of Buffalo will begin its fifty-sixth annual session, September 29.

Vaccination of school children began Monday. The health commissioner supplies shields to each child vaccinated. Circulars of instruction as to the care of vaccinated arms, printed in English, German, Polish and Italian, will be sent to parents.

Emergency Staff Reorganized.—Because of the death of Dr. Clayton M. Daniels the Emergency Hospital staff has been reorganized as follows: President, Dr. John H. Pryor; vice-president, Dr. William C. Krauss, and secretary, Dr. Vertner Kenerson.

Personal.—Dr. George Roberts has returned from a five months' visit in Europe.——Dr. C. Stolzenbach of Hanover, Germany, has recently visited the city.——Dr. Jacob M. Kraus has gone to Denver, Colorado, for his health.——Dr. Max C. Breuer has returned from Europe.

The August mortality was at the rate of 16.86 per 1000 per annum. There were 47 deaths from pulmonary consumption, 76 from cholera infantum, 8 from typhoid fever, and 28 from cancer. Total deaths for August were 520 as compared with 551 for the corresponding month of 1901.

New York City.

Personal.—Dr. Allen Fitch, New York City, has resigned and will spend two years abroad in the study of insanity.—— Nothing has yet been heard of Dr. William H. Bates, who so mysteriously disappeared August 30.

Spitting Ordinance to be Enforced.—Dr. Joseph H. Raymond, the assistant sanitary superintendent having charge of the Borough of Brooklyn, announces that he will rigidly enforce the ordinance prohibiting expectoration on sidewalks, railway platforms and other public places.

New Hospital in Jamaica.—A new hospital is to be established in Jamaica, Queens Borough. Rev. Henry Zimmer has donated a plot of ground 125 by 125 to the Dominican Sisters of Brooklyn as a site for the new building. The present plan is to build a modern hospital, with all equipments, to cost from $25,000 to $30,000.

An Interrupted Operation.—Just as a patient in the Polyclinic Hospital had been etherized and the first incision made for some operation on the intestine, an explosion in the sterilizing apparatus put the surgical apparatus out of commission. A hurry call was sent to Bellevue Hospital for an ambulance, and the wound having been hastily dressed the man was rushed at top speed to that hospital, and the operation completed. He died, however, in a few hours.

Thief in Bellevue.—An orderly in the interne's quarters of Bellevue Hospital has been arraigned in court on the charge of stealing clothing, jewelry and surgical instruments from members of the house staff. It is said that he has carried on his thefts for months, and that these stealings represent in value over two thousand dollars. When arrested there were upwards of fifty pawn tickets on his person, and a large assortment of surgical instruments was found at his lodging. He had formerly been a patient.

The Straus Milk Charity.—For the past twelve years, through the philanthropy of Mr. Nathan Straus, the poor have been supplied in the summer from numerous milk depots with Pasteurized and modified milk for infants. The Health Department records show that the mortality among infants under five years of age has steadily decreased during these years, and it is asserted that this diminution is most marked in those districts of the city in which this milk is most freely distributed. The summer mortality has been reduced about one-half, largely, it is thought, through the good work of this charity.

Fresh-Water Doctor Fined.—Adolph Grundman, sixty-three years old, who styles himself a "fresh-water doctor," was committed to the City Prison for thirty days in the Court of Special Sessions, September 11, on the charge of having practiced medicine without a license. Grundman was arrested on August 23 on complaint of Mrs. Mary Vlack of 349 Third

Avenue, who testified that her husband had been treated during July and August by Grundman, and that he had prescribed fresh water internally and externally. He supplied the water at $5 a pail, and four pails were used. There being no improvement in her husband's condition. Mrs. Vlack became suspicious and complained to the authorities.

Rigid Medical Inspection in the Schools.—So far, although only a portion of the children attending the public schools have been examined by the medical inspectors, about two thousand have been excluded because of some form of contagious disease. This has called forth indignant protests from the parents, but the Health Department announces that it is willing, so far as it is practicable, to treat medically such of these children as are too poor to receive the proper care from private physicians. The Health Commissioner has now very greatly reduced the number of school physicians, and has increased the salary four-fold. In return for this better compensation, each of these medical inspectors is now required to look after three schools, making daily visits to each school, and each day personally inspecting all of the scholars in one of these schools. In this way all public school pupils are to be inspected once every three days. The results have already amply justified the change, as under the old régime less than one-tenth of the number of cases of contagious disease would have been detected and excluded.

OHIO.

Cleveland College Opens.—The Cleveland College of Physicians and Surgeons, the medical department of Ohio Wesleyan University, held its opening session, September 17.

Niles City Hospital.—The Niles City Hospital Company has been organized with Dr. Thomas O. Clingan, president; Dr. Charles T. Swaney, vice-president, and Dr. Curtis C. Williams, secretary and treasurer.

Post-Graduate School in Cincinnati.—A movement is on foot to establish a post-graduate medical school in Cincinnati. The faculty will be composed of members of the faculties of Miami Medical College, and the Medical College of Ohio.

Tuberculosis Commission.—The governor has appointed the following commission to investigate as to the advisability of the establishment of a state sanitarium for tuberculosis: J. H. Outhwaite, Columbus; Max Senior, Cincinnati: Dr. Charles E. Slocum, Defiance; J. M. Rusk, McConnellsville; S. S. Knabenshue, Toledo; Cady Staley, Cleveland, and J. Warren Smith, Columbus.

PENNSYLVANIA.

Latrobe Health Board.—Drs. Joseph D. Casey and Lauren C. Thomas have been appointed members of the local board of health.

Uniontown Hospital.—At a meeting of the Uniontown Hospital Association, September 18, the contract for the erection of the building was awarded. The building is to be 143 by 90 feet, will accommodate 80 patients, and will cost about $65,000.

Philadelphia.

Low Mortality.—For the week ended September 20, 336 deaths were reported. This is a lower death rate than for any corresponding period for years.

Additions to Orthopedic Hospital.—New buildings, at a cost of $150,000, are being erected as additions to the Orthopedic Hospital and Infirmary for Nervous Diseases. They include a five-story and basement hospital building, a power house and basement kitchen.

Guggenheim Increases Gift.—Meyer Guggenheim of New York has added $20,000 to his gift of $60,000 for the erection of a hospital for private patients on the grounds of the Jewish Hospital, Philadelphia. The structure will be larger than originally planned. It is expected that not only this building, but the other new buildings of the same institution, the Loeb operating building and the Eisner building for nurses will be finished by Jan. 1, 1903.

GENERAL.

Change in Army Medical School Faculty.—Col. Calvin De Witt, assistant surgeon-general, U. S. A., is detailed as president of the faculty of the Army Medical School, to relieve Col. Charles Smart, assistant surgeon-general, U. S. A.

Health of Army Improves.—The report of the surgeon-general for the year ending June 30 last shows a gradual improvement in the condition of the health of the troops, notwithstanding many were subject to exposures of tropical service in the Philippines. Concerning the health of the troops in the islands, the report says:

> The character of service in the different parts of the archipelago has varied more during the year than in any similar period since American occupation. Although a great deal of hard field service has been done and much new country occupied, there has been a decrease in sick and mortality rates, for improved conditions in peaceful provinces have more than balanced conditions where there was active service.

Yellow Fever Germ Found.—The expected announcement of the yellow-fever germ is reported in the telegraphic news from New Orleans as given by Prof. George Beyer, of Tulane University. The commission sent by the U. S. Marine-Hospital Service has for several months been at Vera Cruz studying the epidemic which was of a particularly pernicious type, the mortality at one time reaching the frightful figure of 87 per cent. The germ of the disease was definitely found, and its character and habits fixed. It is of much higher order of life than had been anticipated, being an animal, not a vegetable organism. That found in the bodies of sufferers from the disease was identical with the germ found in the mosquitoes. During the epidemic at Vera Cruz the mosquitoes were especially numerous. The authorities of the Mexican city determined to inaugurate a war against the insects and appointed a committee, with Professor Beyer at the head, to exterminate the mosquitoes. The result of the war was that the number of cases of yellow fever were reduced one-half. Professor Beyer would not say whether the germ discovered at Vera Cruz was or was not the Sanarelli germ, but the belief is that it is a germ never before discovered.

Mosquitoes on Ships.—An investigation by the U. S. Marine-Hospital and Public Health Service has just been concluded by Surgeon H. R. Carter concerning the extent to which vessels are infected with yellow fever by mosquitoes. His conclusions are summed up as follows:

> 1. Vessels aboard which yellow fever had been contracted—i. e., vessels infected with yellow fever have not been rare, at least at Southern quarantine stations.
> 2. Such vessels are much rarer since 1893, and are not very common now.
> 3. That the diminution of the number of infected vessels reaching United States ports is due mainly to the sanitary measures for avoiding exposure to infection in the foreign ports, and to the substitution of steam for sailing vessels. To some degree the falling off of the vessels from Brazilian ports is also a factor.
> 4. That a case of yellow fever developing aboard a vessel plying between Southern ports of the United States and the tropics will probably infect the vessel so that other cases can, if time be given, be contracted aboard her.
> 5. Such vessels, however, if short trip vessels, not more than ten or twelve days en route after the occurrence of the case of yellow fever, will in general be disinfected at Southern quarantine stations before any other cases have been contracted aboard, although harboring infected mosquitoes.
> 6. That a case of yellow fever so occurring aboard a vessel from a Southern port of the United States would be able to infect her or not according to whether she had acquired the mosquitoes *Stegomyia fasciata* in the tropical port.
> 7. It is, in general, then necessary to disinfect all vessels running between Southern ports and tropical ports if a case of yellow fever occurs aboard, no matter where it be contracted, while vessels running between Northern ports and the tropics may, through precautions in tropical harbors, have no stegomyia aboard, and are thus not infectable by cases of yellow fever occurring aboard.

Smallpox.

COLORADO: There were 9 cases reported in July, 7 of which occurred in Prowers County.

CONNECTICUT: During August 12 cases were reported from 6 localities.——The secretary of the State Board of Health, in the August Bulletin, discusses the vaccination question as follows:

> The question of prime importance relating to public health at the present time is the prevention of the spread of smallpox. At no time in the history of the United States has this disease been more generally prevalent. It has occurred within the last few years in every section of the country between its ocean boundaries. As the cold weather approaches and compels the closing of dwellings, schools and factories, outbreaks of the pestilence will occur with increasing frequency in the towns and cities that have neglected the only effective means of arresting its progress, namely, vaccination. The exceptional mildness of the prevailing epidemic is a source of danger, rather than of safety. Its victims are sometimes so slightly ill that they travel in the trains, exchange visits with their neighbors, and even the doctors dispute the diagnosis.
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> Innumerable instances of its communication in this manner are reported. Quarantine and disinfection of such instances are wholly impracticable. The only safety of any individual is by vaccination. The only protection for a community is vaccination. The fact of its protective power is as well settled as any fact in sanitary science. The exhaustive investigation of the whole subject of vaccination by the English Royal Commission and its final verdict, the experience of over 100 years in the practice of vaccination throughout the civilized world, and especially the results in European countries where vaccination is compulsory and the law is enforced, give unanimous testimony to its safety when properly practiced, and to its protective power.
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> The only serious objections urged by the anti-vaccinationists can be avoided by well-known means. Nevertheless by the activity of

these objectors, their unscrupulous falsification of statistics, their unblushing mendacity and their sensational appeals to the fears and the prejudices of the credulous and uninformed, they have assumed a fearful responsibility in hindering the arrest of smallpox by their opposition to vaccination.

An instance of their misrepresentations is quite recent. They have announced and widely published that in the city of Cleveland, Ohio, smallpox had been stamped out by disinfection and without vaccination. The facts are, however, that instead of being stamped out, it so increased after stopping vaccination that Buffalo and other lake cities felt so much endangered by its prevalence there, that they "seriously considered the advisability of establishing a quarantine against it," and threatened that "unless immediate action be taken and results shown, quarantine will be instituted in a most vigorous manner."

This threat communicated to the State Board of Health of Ohio aroused its attention, and the Connecticut Board was informed by letter last week, from the secretary of the Ohio Board, that vaccination is going on at the rate of 10,000 per day in Cleveland.

The general vaccination of a community is in the interest of the taxpayer. The average cost of an epidemic of smallpox in a town is often many times what it would have cost for full protection from it. And with the epidemic comes the cost of both. It is well for prudent selectmen and city councils to think of this.

ILLINOIS: Smallpox has been reported to the State Board of Health during the past week from DuBois, Washington County, and Chandlerville, Cass County.

INDIANA: In one home in Monroe County there are seven cases of the disease. Many cases are said to exist in Ridgeville.

NEW YORK: The smallpox epidemic which has been afflicting Rochester since the latter part of last April has been stamped out. The Health Department report shows that the disease was brought to the city by two tramps from Troy, N. Y., about four months ago.

There have been 142 cases and 17 deaths from the disease, and 37 persons were detained at Hope Hospital at different times as suspects. The death-rate was 11.97. In less than six weeks more than forty thousand persons were vaccinated. Of the $50,000 appropriated by the Common Council $28,000 was expended in fighting the disease. A curious incident of the epidemic was that 92 of the 142 cases were found in 22 families, 13 cases occurring in one family which did not believe in vaccination.

Ossining had three smallpox cases last summer, and now the village trustees are confronted with bills aggregating $5,210.30. A local doctor who took charge of the cases put in a bill for $2,000 for fifty visits made in twenty-five days, $40 a visit or $80 a day. The patients were kept in a houseboat anchored in the river. The boat, it is estimated, cost about $25, but the board of health agreed to pay $225 for it. In addition to this there is a bill of $189 for the use of a sailboat, power launch and towing. Two towboats cost $84. There is another charge of $50 for rent of another boat. The grocery and meat bills for patients amounted to $337.34, besides $33.75 paid to a hotel for persons kept out of their homes by the quarantine, making the total $371.09. The patients are said to have consumed $130.50 worth of whisky, about 2½ quarts a day. The clothing bill amounted to $182.38. In addition to all this the board has a bill of about $60 for building a pesthouse that was never used. A man who earns his living by fishing put in a claim for $200 for deprivation of the use of the beach.

OHIO: The health officer of Cleveland has invited John D. Rockefeller to provide a fund to be used in the search for the germ of smallpox. He has contended for some time that cats and dogs are the worst distributers of the smallpox germs that can be found. The hair of either animal may be filled with the germs and then a child may play with the pet. The result is another new case of smallpox. If the dog is permitted to run at large the danger is more than doubled. He has accordingly issued an order. The doctor insists that in all families where smallpox is discovered and where there is a dog or a cat the animal must be killed.——The Cleveland City Council has appropriated $40,000 to be used in combating the spread of smallpox.——At a special meeting of the Youngstown Board of Health, September 19, the following resolution prepared by Dr. W. L. Buecher was unanimously adopted: "Smallpox raging epidemically in Pittsburg and Cleveland, the board of health considers it its duty to advise the citizens of Youngstown to abstain from visiting those cities, except on necessary business, and the board of health strongly condemns the running of excursion trains from and to these cities."

PENNSYLVANIA: More than 50 cases of smallpox have occurred at Rock Run, near Coatesville. Eight special officers have been detailed to enforce quarantine. Aid is asked from Philadelphia.——The Johnstown board of health has decided on the erection of a municipal hospital to cost $10,000 to replace the one above Morrellville, where an epidemic of smallpox exists, for which the hospital is blamed.

UNITED STATES: Investigation shows that from Dec. 28, 1901, to June 13, 1902, there were in the United States 36,373 cases of smallpox and 1,154 deaths resulting from the disease. As compared with the previous year there was an increase of 8,000 cases and nearly 600 deaths. In New York there were 1,522 cases and 233 deaths; Massachusetts had 1,088 cases and 146 deaths; Indiana, 1,346 cases and only 10 deaths; Kansas, 1,885 cases and 3 deaths, and Minnesota 6,940 cases and 31 deaths.

FOREIGN.

New Medical Institution at Frankfurt.—Frankfurt a. M. is planning the erection of an Academy for Practical Medicine, with which will be connected an official establishment for testing the new drugs and artificial foods put on the market every year. A laboratory for medico-clinical diagnosis is also to be a feature of the institution.

Advantages of a Medical Mayor.—Dr. Augagneur is mayor of Lyons, France, and has banished from the public places under his jurisdiction the advertisements of persons claiming to cure venereal disease. He has also vetoed all applications for the erection of projecting signs by magnetic healers, trance healers, massage establishments, etc., and revoked all previous permits for the same.

Supervision of the Teeth of School Children in Denmark.—The town of Frederiksberg in Denmark has hired a dentist to inspect the teeth of the school children regularly twice every year. Parents are notified by a printed circular whenever the teeth of their children are found to need attention. The supervision extends to both the public and private schools, and has proved a most salutary measure, as was officially announced with details at the recent Danish dental congress.

Medical School in Cochin China.—Our exchanges state that the French government has appropriated funds to found a medical school at Hanoi for the purpose of training native physicians and for the study of tropical diseases. The faculty will have oversight over the Pasteur Institute in Annam, a laboratory for the production of vaccine and serums, and for bacteriologic research, etc. A French hospital is also to be erected at Canton for the use of the natives, and $40,000 has been sent to the consul there for the purpose.

The International "Centralbureau" for the Crusade Against Tuberculosis.—This central committee comprises 120 men prominent in the campaign against tuberculosis. As already announced, it will assemble at Berlin October 22. The chief aim of the conference is to frame a constitution and define and discuss the questions of the day in regard to the white plague. Another feature of the assemblage will be the attempt to bring into co-ordination the so-called "wild tuberculosis congresses" and have the entire movement everywhere proceed along certain regular lines.

Deaths Abroad.—Don Federico Rubio, an eminent surgeon at Madrid, founder and editor of the imposing quarterly, *Revista Ibero-Americana de Ciencias Medicas*, and at one time ambassador from Spain to England. His clinic was a focus of light for Spain and Spanish America. *El Siglo Medico* remarks that his entire life was inspired with the "purest and most beneficent of all motives, the love of posterity." He was in his seventy-sixth year at the time of his death.——E. Teinturier, Paris, a prominent neurologist and writer, connected with the *Mouvement Médical* and the *Progrès Médical* since their foundation. He was particularly interested in the interpretation of miracles by the light of modern neurologic science and his works on this subject are well known.——B. Alcina, professor of therapeutics at Cadiz.——H. Dagonet, formerly professor at Strasburg and physician in chief of the asylums for the insane in the department of the Seine, which includes Paris.——R. A. Riant, Paris.——A. Graefe, Berlin, a member of the famous Graefe family of ophthalmologists.——L. Switalsky, privat docent of gynecology at Cracow.

The Cholera Epidemic in Egypt.—A pilgrim returning from Mecca managed to conceal the fact that he was ill and was passed by the quarantine authorities at Tor and allowed to proceed to his home in a remote village in Upper Egypt as being free from disease. Soon after his return home numerous cases of sickness developed in his village, but the fact that it was cholera was not recognized until 96 persons were affected. The vigorous measures then instituted had the effect of spreading the disease broadcast, as the natives abhor disinfection, isolation, etc., and at the first intimation of sickness fled to distant villages. Even in the houses in which deaths from cholera had occurred, and which were guarded by native sanitary officials, clothing and other articles gradually vanished. Some of these officials think that cholera was invented to provide them with a salary and opportunities for making a

little pocket money. The disease is now epidemic, according to a report quoted by the *Allg. Med. Ct.-Ztg.*, in sixty places and in every province. About 90 per cent. of the cases terminate fatally, and as is readily seen from the official reports given weekly on the last page of THE JOURNAL, the condition is serious and growing worse. The prospects of the first Egyptian Medical Congress, organized for December of this year, are already blighted.

Correspondence.

Gastroptosia not Gastroptosis.

NEW YORK CITY, Sept. 15, 1902.

To the Editor:—In answer to the letters of Drs. N. O'Donnel Parks and William J. Robinson in THE JOURNAL of August 23, instead of writing a long letter I wish to refer to my paper "Greek in Medicine," read before the Book and Journal Club of Johns Hopkins University and published in this year's May number of *Johns Hopkins Hospital Bulletin*, translated also into Greek, German and Dutch. The translations appeared in Cyprus, Munich and Utrecht. It shall give me pleasure to send a report of the original or some of the translations to any colleague who will honor me by writing for them.

Here are some passages which are applicable to what my opponents have said:

"Twenty years ago, in an article which appeared in the *Berliner Klinische Wochenschrift*, Virchow said: 'Is it not justifiable at the present time to remind the physicians that they should use all possible exertion to show their scientific training in all, even in apparently small things? Is it not the first characteristic of a man of science that he should understand how to employ the language of science? The first thing by which the expert demonstrates his qualification is the correct use of technical terms; this especially causes respect for him, and nothing more enhances his utility'; and he closes his remarks with the wish that his views might be generally adopted. If we address this admonition to the medical profession at large we shall have to say: Would it not be justifiable at the present time to remind the profession to prove our science by establishing a scientific onomatology? The incorrectness of many of our medical terms can not be denied, but the extent of this incorrectness is larger than most of us have ever conceived; the evil is increasing every day, and the remedies thus far suggested have only brought confusion; they are not, and have not been, taken seriously; they have only brought discredit.

"It is not necessary to enumerate all the vain attempts at reformations of our onomatology; a single one, and I select the one which is most conspicuous at present, will suffice. We shall see why they were all of no avail, but we shall also see how we really can secure scientific onomatology which will stand as long as our science is taught, and which will be beyond all criticism."

I have to refer to the paper itself about the plan I have suggested.

"The facts I have presented to the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland will, I am certain, find an echo in the medical profession. There exists a well-pronounced demand by all true men of science for purity and correctness of medical language. Professor R. Kossmann of the University of Berlin, whose name as a gynecologist is familiar to you, but who is not only a gynecologist, but has also distinguished himself as a philologist, says: 'In forming our pathological and surgical technical terms we can by no means dispense with Greek, and so long as we admit that the retention and introduction of Greek synonyms for pathological and surgical expressions is a necessity, we have for the sake of correctness and beauty of language to decide to go a step further, to do away with hybrid terms and establish pure Greek synonyms in their place. Whoever has familiarized himself with classical literature will find it more and more intolerable to name a scientific conception by a Greek- or Latin-like sounding word-monstrosity, especially when he knows the real Greek name.'"

If my opponents will look up the literature on the question of atonia gastrica they will see that the agitation for correctness of medical terms has not only a scientific but an eminently practical importance.

Further, if the gentlemen will look up the voluminous literature on this question since I have introduced it—if they will read the views of some of the most prominent men of our profession, they will certainly change their ideas and will perhaps regret to have pronounced them.

A. ROSE.

ASHTON, R. I., Aug. 28, 1902.

To the Editor:—Recurring to the inane controversy about appendicitis and perityphlitis, the latter word is itself a confession of ignorance on the part of those who use it. The word means inflammation in the neighborhood of, περί, about the cecum, τυφλον. "There is an inflammation somewhere," they say, "we do not know where, but it has reference to the cecum, anyway." They ignore the appendix, a rudimentary organ which has no other apparent object than to create trouble by exciting inflammation (perityphlitis). They fight about words, mistake the effect for the cause, temporize, mistreat the case, and the patient dies.

In another case a practical surgeon, unskilled in philology, is called in. He at once pronounces the case to be appendicitis, neither knowing, perhaps, nor caring for the derivation of the word, nor casting a thought on it or its meaning. He promptly operates, removes the peccant organ, cures his patient and saves a valuable life to the world.

To those philologists who object to the word appendicitis as being mongrel I would suggest a term which I fear will not be adopted. It is ekphyoskolekoeiditis, ἐκ, out of; φύω, to grow; σκώληξ, a worm, and εἰδός, form, which is almost a literal translation of appendix vermiformis from Latin into Greek, plus "itis." I am loth to assume the parentage of this word; it is uncouth; let it go: let appendicitis stand.

N. O'D. PARKS.

P. S.—In your issue of August 23 you made me sign myself H. instead of N. O'Donnel Parks. The man who printed my letterheads is responsible for this. The N does really look like H.

N. O. P.

Quack Advertisements and Religious Papers.

RIDGWAY, PA., Sept. 20, 1902.

To the Editor:—This last summer I drafted and presented to the official board of the First M. E. Church of this place, being a member of the board, a set of resolutions, drawing attention to the falseness of statements and dishonesty of purpose of various advertisers of "patent" medicines, and condemning the publication of such advertisements by the publishers of our church periodicals. The resolutions were passed, but two members of the official board voting against them. I took the ground that it was detrimental to the interests of the church that the papers should receive a profit from so false a business. Copies of the resolutions were sent to the various church publications circulating in this district. If necessary this move can be followed up to the annual and general conferences.

J. C. MCALLISTER.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

SODIUM GLYCOCOLATE IN DISEASES OF THE LIVER.

SHERWOOD, MD., Sept. 12, 1902.

To the Editor:—I have received a number of letters from readers of THE JOURNAL since the publication in the August 16 number of the article by Dr. T. W. Keown of Baltimore, entitled "Sodium Glycocolate in Diseases of the Liver," in which he mentions three cases of gallstones cured by me by the use of this remedy. The letters make inquiry of the particular preparation I have used in the treatment of these cases. Dr. Keown did not state in his article that the remedy I used was not a pure salt of soda and glycocolic acid but a mixture of salts formed with soda and all the bile acids. The preparation used by me is made by Dr. Herbert Richardson of Mt. Hope Retreat, Md., from the fresh liver of the bullock, and

supplied me by Hynson, Westcott & Co., of Baltimore. I have not met with success with other preparations known as glycocolate of soda in the treatment of cholelithiasis. H. BURTON STEVENSON.

MALARIA WITH ANASARCA.

ARKANSAS CITY, ARK., Sept. 19, 1902.

To the Editor:—Replying to the query of Dr. Morse in THE JOURNAL of September 13; the anasarca caused by malaria is common, more common, however, is edema of the feet. A hydremic condition of the blood resulting from malarial cachexia causes this condition. For literature I would refer the Doctor to Tyson's Practice, First Edition, page 70; and to DaCosta's Physical Diagnosis, Eighth Edition, pages 831 and 959. Wilson & Ashton, in Sajous' Analytical Cyclopedia, Volume IV, page 318, also describe this condition, and in Eichhorst's Practice of Medicine, Volume I, page 382, cachexia is given under the etiology of ascites.

Very respectfully, VERNON MACCAMMON, M.D.

ARTIFICIAL FOODS FOR INFANTS.

DETROIT, MICH., Sept. 16, 1902.

To the Editor:—Your article on "First Aid Dangers" [Editorial, August 30, page 493] touches the spot. During the past ten years I have seldom reported a birth. The various makers of baby foods seem to have no difficulty in securing the addresses of the parents of the few I have reported and they have loaded them up with samples and literature of "how to feed the baby." One New York house has issued a small "Practice of Medicine for the Use of Mothers." Of course in its preface it states "that the work is not to displace the family doctor." Yet it carefully and fully gives diagnosis and treatment (with their products) of all the diseases of childhood. A great deal of credit is due to the makers of artificial foods for infants. Still I think a number of them should confine themselves to their specialty and leave to the physician diagnosis and treatment. Respectfully, E. T. MILLIGAN.

State Boards of Registration.

North Dakota Report.—Dr. H. M. Wheeler, secretary of the North Dakota State Examining Board, reports the examination held at Grand Forks, July 1 to 3, as follows: Number of subjects, 13; percentage required, 75; written examination; total number examined, 22; passed, 19; failed, 3.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Percent.
342	R.	Barnes Medical College	1900	75
356	R.	Barnes Medical College	1901	78
362	R.	Barnes Medical College	1902	77
343	R.	Hamline University	1901	75
354	R.	Hamline University	1902	87
360	R.	Hamline University	1901	77
344	R.	Detroit Medical College	1902	82
345	R.	Rush Medical College	1902	75
346	R.	Queen's Medical College	1902	80
348	R.	University of Minnesota	1902	77
357	R.	University of Minnesota	1902	79
349	R.	University of Michigan	1901	81
350	R.	University of Michigan	1902	79
351	R.	Trinity University	1902	80
352	R.	Trinity University	1901	83
353	R.	Trinity University	1901	85
361	R.	Trinity University	1902	82
358	R.	Physicians and Surgeons, Chicago	1902	76
359	R.	Harvard University	1901	75

FAILED.

347	R.	University of Minnesota	1902	73
355	R.	Detroit Medical College	1902	..
363	R.	Louisville Medical College	1894	..

Book Notices.

MANUAL OF ANTENATAL PATHOLOGY AND HYGIENE: THE FETUS. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S. Edin., Lecturer on Midwifery and Gynecology, Medical College for Women, Edinburgh. Pp. 527. Price, $7.00. Edinburgh: William Green & Sons. 1902.

The author of this volume is a widely recognized authority on the anatomy and physiology of the fetus and on teratology. In this work he gives his attention mainly to fetal physiology and pathology. In its preparation he has studied nearly three hundred specimens and has mastered all the important articles which have been published by other workers. As a collector of observations Dr. Ballantyne is comprehensive and accurate, and is always careful to distinguish facts from speculations. This volume must at once take an authoritative place among medical works. Apart from its value as a storehouse of observations, it is certain to serve as stimulus to all who desire to carry on original research. The author points out the many gaps in our knowledge of fetal physiology and pathology and suggests many lines of inquiry.

HANDBOOK OF BACTERIOLOGICAL DIAGNOSIS FOR PRACTITIONERS, Including Instructions for the Clinical Examination of the Blood. By W. D'Este Emery, M.D., B.Sc. Lond., Lecturer on Pathology and Bacteriology in the University of Birmingham. Cloth. Pp. 215. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1902.

This little book, which is in size suitable to the pocket, was written, according to the author, for the general practitioner who has not had the opportunity furnished the rising generation to familiarize himself with the modern laboratory technic. As a result the work is quite elementary, and deals more with what the practitioner can and ought to do rather than with the details of how to do it. As a work of this class it does very well, but as it is not technical, it can scarcely be criticised along this line.

Marriages.

LEON FEINGOLD, M.D., to Miss Rosalia Richter, both of Chicago, September 17.

ERNST STUART ALBEE, M.D., Oshkosh, Wis., to Miss Harriet Altschul of Lima, Ohio.

LEE STONE, M.D., Sturgis, Ky., to Miss Eva Nall of Louisville, Ky., September 17.

W. W. WOOD, M. D., Angola, Ind., to Miss Merle E. Sayler of Digby, Ohio, September 2.

EDGAR S. HOOPER, M.D., to Miss Emma Vickers, both of Darlington, Wis., September 3.

XENOPHON OLSEN, M.D., Vliets, Kan., to Miss Grace E. Johnson of Frankfort, Kan., August 27.

FELIX MORAUX, M.D., Luxemburg, Wis., to Miss Maggie Kiley of Green Bay, Wis., September 9.

EDWARD BRUCE MCDANIEL, M.D., Baker City, Ore., to Miss Ellen Carlson of Chicago, September 13.

ALBERT W. SHAW, M.D., Buhl, Minn., to Miss Anna Laura Purdy of Minneapolis, Minn., September 24.

JOSEPH ROSENTHAL, M.D., Sault Ste. Marie, Mich., to Miss Fannie Ochsen of Philadelphia, September 10.

HUGH SCHUSSLER, M.D., Alton, Ill., to Miss Georgia Kober of Chicago, at West Alton, Ill., September 14.

ARTHUR RUICKOLDT, M.D., New Haven, Conn., to Mrs. Emma Wetherbee of Burlington, Conn., September 9.

JOSEPH E. WESTERLUND, M.D., Cambridge, Ill., to Miss Emma C. Wahlberg of South Moline, Ill., September 10.

GUY L. HUNNER, M.D., of the Johns Hopkins Medical School, Baltimore, to Miss Isabella Stevens, at Baltimore, September 10.

SIEGFRIED A. VAN HOEFEN, M.D., St. Louis, Mo., to Miss Minnie Statler of Crawford County, Ark., at Kansas City, Mo., September 3.

NEWBERRY A. S. KEYSER, M.D., Bradshaw, Md., to Miss Caroline Blanche Rumsey, at Upper Falls, Baltimore County, Md., September 10.

JAMES R. BARNETT, JR., M.D., Neenah, Wis., son of Dr. James R. Barnett of the same city, to Miss Agnes Chapman of Watertown, Wis., September 12.

ALBERT SOLLAND, M.D., Los Angeles, Cal., to Miss Dagfine Svendsen of Southern Norway, at the residence of the bridegroom's parents in Chicago, September 17.

Deaths.

John W. Hughes, M.D., died at his home in Latrobe, Pa., September 11, from catarrhal pneumonia, after an illness of one month, aged 64. He was a prominent member of the Medical Society of the State of Pennsylvania and served as major and surgeon in the Civil war with the Fifth Pennsylvania Cavalry.

George H. Moore, M.D. Transylvania University, Lexington, Ky., 1884, who served during the Civil war on the Confederate side as surgeon of the Sixth Mississippi Cavalry, died at his home in Memphis, Tenn., September 16, aged 81.

William E. Higdon, M.D. College of Physicians and Surgeons, Kansas City, Kan., 1898, of Kansas City, Mo., died from typhoid fever, September 12, at the Sisters' Hospital, Kansas City, after an illness of four weeks, aged 35.

Henry D. Grindel, M.D. New York University, 1867, died at his home in San Diego, Cal., September 14, after a protracted illness, aged 75. He was a member of the San Diego County Medical Society.

Christopher M. Bell, M.D. College of Physicians and Surgeons, New York, 1865, a New York physician who retired from practice several years ago, died at Baden Baden, Germany, September 3.

Frederick G. Ibach, M.D. Jefferson Medical College, Philadelphia, 1879, died at his home in Mauch Chunk, Pa., September 11, from acute Bright's disease, aged 44.

John B. Du Kate, M.D. Louisville (Ky.) Medical College, 1871, died at his home in Vincennes, Ind., September 12, from Bright's disease, after a short illness, aged 60.

William B. Coburn, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1901, died at his home in Waterford, Me., September 9, from appendicitis, aged 29.

Martin Brown, M.D. Medical College of Ohio, Cincinnati, 1880, died suddenly in his rooms in Anderson, Ind., supposedly from apoplexy, September 17, aged 50.

John M. Wert, M.D. Jefferson Medical College, Philadelphia, 1880, died at his home in Philadelphia, September 13, after a lingering illness, aged 51.

George Lisle, M.D., the first white resident of Labette County, Kan., and the founder of Chetopa, died at his home in that place recently, aged 88.

Frank Lindsey, M.D., an old resident of Big Stone Gap, Va., died at his home in that place, September 13, after an illness of six months, aged 61.

Elbert A. Banks, M.D. Tulane University, New Orleans, La., 1868, an old practitioner of Columbus, Ga., died in Wynnton, Ga., September 9, aged 62.

Edmund H. Cook, M.D. Bellevue Hospital Medical College, New York, 1893, died at his home in Flushing, Long Island, N. Y., September 14, aged 39.

Mathias W. Mabry, M.D. University of Virginia, Charlottesville, 1842, died at his home in Augusta, Ga., September 9, aged 80.

William D. Eastland, M.D. Tulane University, New Orleans, La., 1892, of Vicksburg, Miss., died at Meridian, Miss., recently.

Miscellany.

Labyrinthitis After Administration of Salicylates.—Scheyer reports in *Wiener Med. Presse*, 1902, 22, the case of a laundress who was given .5 gm. sodium salicylate five times a day in treatment of a second attack of acute articular rheumatism three years after the first. After a week of this treatment symptoms of an affection of the middle ear developed and persisted notwithstanding suspension of the drug, resulting in permanent deafness, complete in one ear and partial in the other.

A Contortionist and His Medical Purchasers.—A man in Massachusetts, who was famous in his day as a contortionist of remarkable flexibility, several years ago sold his body (the goods to be deliverable after death) to a Detroit physician, who was anxious to study his skeletal formation; but after paying the money the physician died, and the heirs threw away that part of the estate as of no value to them. Another deal in futures was then made with a New York physician, but he also died. The contortionist, who is now nearly eighty years old and in excellent health, is said to be looking around for another purchaser.—*Med. Record.*

Diet in Smallpox.—According to N. S. Davis, Jr., anorexia, thirst and vomiting are noteworthy symptoms at the onset of this malady. Vomiting is usually not of frequent occurence. Cool drinks should be given; indeed, water should be administered freely in all stages of the disease, both because it adds to the comfort of the patient, and because it will help to avert nephritis, which is an occasional complication. Febrile albuminuria is common. A liquid, non-albuminous diet will lessen or stop it. During the febrile stage a liquid diet, such as is usually prescribed in acute fevers, should be given—milk, broth, gruel, etc. Often the mouth and throat are so sore from the eruption that swallowing is difficult. Food must then be given in small portions at a time. Ice and ice cream are often grateful to patients at this time. Sometimes swallowing is so painful that rectal alimentation must be resorted to. It should not be relied on longer than is absolutely necessary, for when suppuration takes place on the skin, prostration develops rapidly, and is often very great. It is, therefore, necessary to give food by the mouth as steadily and in as large quantities as possible. Rectal alimentation must occasionally be utilized in order to help maintain strength when the stomach will not tolerate or digest food enough. Milk should be the staple article of diet. Gruels, weak tea, Mellin's food, farina and similar articles may be employed for variety. If there is no albuminuria, or if it is only trifling and transitory, bouillon, broths, raw or soft-cooked eggs, custards, and such dishes may also be used. If digestion is fairly good, as it is in mild cases, milk toast, soft-boiled rice or oatmeal, cornstarch pudding, blanc mange, gelatin jellies, finely mashed potato with meat-juice squeezed on it, may be given and will be relished. In the severer cases these articles may be given only during convalescence.—From Cohen's "System of Physiologic Therapeutics," Vol. VI.

New Instrument.

A STONE PHONENDOSCOPE TUBE.

HOWARD J. WILLIAMS, M.D.
MACON, GA.

Recently while examining a patient for stone in the bladder I wished to test the conductivity of the sounds by the phonendoscope placed over the suprapubic space while the searcher

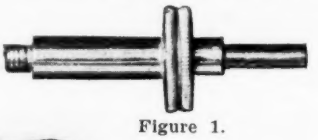

Figure 1.

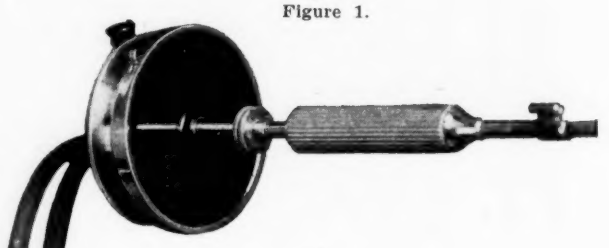

Figure 2.

was being moved about in the bladder. The results were unsatisfactory, but the idea was suggested by the experiment of attaching the phonendoscope to the searcher.

A medium-sized screw was procured, the head and point of which being removed the shank fitted in the handle of a Thompson stone searcher, while the thread end caught snugly in the opening in the cardiac diaphragm of the phonendoscope. The connection being made, I repeated the examination and was rewarded by finding that the sounds were easily carried to the ear, intensified by the vibrations of the middle diaphragm of the phonendoscope.

I was so well pleased with this rough combination of the two instruments that I at once drew a design of a tube for attaching the phonendoscope to a Thompson searcher and had made the instrument illustrated in Figure 1. Figure 2 illustrates the two instruments attached by the tube ready for use.

Since the receipt of this tube, I have repeatedly tested the value of this manner of examination, both in the human bladder and by placing various foreign bodies of different characters in a rubber bag filled with water. In experimenting with foreign bodies in a bag full of water under cover, I find

that not only the sounds reproduced by touching the bodies with the searcher are transmitted to the ear, but that the accentuation of the sound by the phonendoscope will reveal distinctly the physical characteristic note of each of the various bodies as the end of the searcher comes in contact with it, and further, that its size may be estimated by the duration of the sound produced as the searcher passes over it. In the human being, the rugæ of the bladder walls and the sizes of each, depending on the degree of distension of the viscus, can be noted, as the end of the searcher passes lightly over their surfaces while it is being turned about in the bladder, by a distinct muffled sound characteristic of the soft yielding mucous membrane. In the only other case of stone examined since the tube was made the characteristic click usually felt and heard in sounding was decidedly intensified by the phonendoscope and its size estimated.

I do not claim any originality in the principles on which the above instrument, if such it may be called, is made. Andrew's searcher and Billroth's sounding board attachment have long been known to the profession as acoustic aids in sounding the bladder for stone. Neither of these instruments will, however, as I know from personal experience, give the accentuated sound that the phonendoscope produces; while with either, the sound of the instrument, passing over the rugæ of a partially filled bladder, will often be mistaken for the muffled click of a soft stone. Both the phonendoscope and the Thompson searcher form part of every physician's armamentarium, while the little device above illustrated will be a material aid in the early accurate diagnosis of stone in the bladder by combining the use of two excellent instruments.

Societies.

COMING MEETINGS.

American Academy of Railway Surgeons, Kansas City, Mo., Oct. 2-3, 1902.
Medical Association of District of Columbia, Washington, Oct. 7, 1902.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Birmingham, Ala., Oct. 7-9, 1902.
Idaho State Medical Society, Moscow, Oct. 9-10, 1902.
Vermont State Medical Society, Burlington, Oct. 9-10, 1902.
Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.
Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Missouri State Anatomical Society.—This body met at St. Joseph, September 12, and elected Dr. Wallace B. Deffenbaugh president and Dr. Harry S. Forgrave secretary, both of St. Joseph.

American Public Health Association.—The thirteenth annual meeting of this association will be held in New Orleans, December 8 to 12, under the presidency of Dr. Henry D. Holton, Brattleboro, Vt.

Mecosta County (Mich.) Medical Society.—The physicians of the county have met at Big Rapids and organized this society with Dr. Joseph McNeece, Morley, as president, and Dr. Franklin C. Terrill, Big Rapids, secretary.

McLeod County (Minn.) Medical Society.—Medical men of the county met in Hutchinson, September 10, and organized a county medical society with the following temporary officers: Dr. Kee Wakefield, Hutchinson, president, and Dr. Frank E. Burch, Glencoe, secretary.

Livingston County (Mich.) Medical Society.—The physicians of the county met at Howell, September 16, and organized this society, with Dr. William J. McHench, president; Dr. Abel S. Austin, Fowlerville, vice-president; and Dr. R. H. Baird, Howell, secretary and treasurer.

New Hampshire Surgical Club.—The annual meeting of this organization was held in Centre Harbor, September 6. Dr. Arthur C. Heffenger, Portsmouth, was elected president; Dr. Charles R. Walker, Concord, vice-president, and Dr. Nelson W. McMurphy, Concord, secretary-treasurer.

Paducah (Ky.) Medical and Surgical Society.—This society had its final meeting, September 10, wound up its affairs and disbanded. As soon as this had been done the members organized the McCracken County Medical Society, which will be in affiliation with the Kentucky State Medical Society.

Central Michigan Medical Society.—This society, at its meeting, held at Lansing, September 11, voted to effect a reorganization under the name of the Ingham County Medical Society. This is in accord with plan proposed by the American Medical Association for the uniform organization of county societies.

McCracken County (Ky.) Medical Society.—The reorganization of this society was completed September 10, at its meeting in Paducah, when Dr. Shandy Z. Holland, Grahamsville, was elected president; Dr. R. Holt. Ragland, vice-president; Dr. Horace T. Rivers, Paducah, secretary, and Dr. Thomas E. Moss, Jr., Woodville, treasurer.

St. Louis Medical Society of Missouri.—A special meeting was held, September 13, at which appropriate resolutions were adopted on the death of Prof. Rudolph Virchow, who was an honorary member of the society. Short addresses were delivered by Dr. Hugo Summa, on "Virchow as a Pathologist," and by Dr. Frank J. Lutz, on "Virchow in Public Life."

Caledonia County (Vt.) Medical Society.—The physicians of the county met at St. Johnsbury, September 8, and organized a society to affiliate with the Vermont State Medical Society. Dr. Lorenzo W. Hubbard, Lyndon, was elected president; Dr. Oscar E. Carter, Danville, vice-president; Dr. Walter J. Aldrich, St. Johnsbury, secretary, and Dr. J. M. Gibson, McIndoe Falls, treasurer.

Hillsdale County (Mich.) Medical Society.—Twenty-five physicians of the county met at Hillsdale, August 28, and organized this society, which will be in affiliation with the Michigan State Medical Society. Dr. Bion Whelan, Hillsdale, was elected president; Dr. Daniel W. Fenton, Reading, vice-president; Dr. Herbert H. Frazier, Moscow, secretary, and Dr. William R. Dittmars, North Adams, treasurer.

Wyoming State Medical Society.—This society held its annual meeting at Cheyenne, September 9 and 10. The following officers were elected: President, Dr. Samuel B. Miller, Laramie; vice-presidents, Drs. John H. Conway, Cheyenne, and Mortimer Jesurun, Douglas; secretary, Dr. Harry S. Finney, Rawlins, and treasurer, Dr. Joseph L. Wicks, Evanston. Rock Springs was selected as the meeting place for 1903.

Northern Tri-State Medical Association.—The annual convention of this body was held in Coldwater, Mich., September 16. Dr. William F. Shumaker, Butler, Ind., was elected president; Dr. Howard M. Byall, Montpelier, Ohio, vice-president; Dr. John R. Williams, White Pigeon, Mich., secretary, and Dr. Arthur G. Holbrook, Coldwater, Mich., treasurer. The association will next meet at Butler, Ind., in 1903.

Oakland County (Mich.) Medical Society.—The physicians of this county met at Pontiac, September 10, and organized a county society to be in affiliation with the Michigan State Medical Society. The following officers were elected: President, Dr. Franklin B. Galbraith, Pontiac; vice-president, Dr. De Witt C. Wade, Holly, and secretary, Dr. William McCarroll, Pontiac. The society has an initial membership of thirty.

Oregon State Medical Society.—At the annual meeting of this society held in Portland, September 10, 11 and 12, the proposed new constitution was passed and the following officers were elected: President, Dr. Henry W. Coe, Portland; vice-presidents, Drs. F. W. Van Dyke, Grant's Pass; J. A. Geisendorffer, The Dalles, and James P. Tamiesie, Hillsboro; secretary, Dr. Alexander D. Mackenzie, Portland, and treasurer, Dr. Mae H. Cardwell, Portland.

Wayne County (Mich.) Medical Society.—This society held a public memorial meeting in honor of Prof. Rudolph Virchow. After introductory remarks by the president, Dr. Samuel Bell, addresses were delivered on "Gross Pathologic Work Pertaining to Tumors," by Dr. Theodore A. McGraw; "Benefits Resulting to Science as a Result of His Microscopic Research Work," by Dr. Heneage Gibbs; "Virchow as a Teacher," by Dr. Max Ballin; "Benefits Accruing to Internal Medicine," by Dr. Johann Flinterman, and "Virchow as a Public Benefactor," by Dr. John J. Mulheron.

Conference of State and Provincial Boards of Health of North America.—The next meeting of the conference will be held at New Haven, Conn., October 28 and 29, under the presidency of Dr. Henry M. Bracken, St. Paul. The following are the topics for discussion: "Presentation of a List of Diseases which are Considered as Communicable"; "Resolutions

in Regard to the Control of Yellow Fever"; "Rules Governing the Transportation of Dead Bodies"; and "An Expression of Opinion in Reference to the Action Taken by the Health Officers in San Francisco in the Sanitary Control of the Plague."

Rocky Mountain Interstate Medical Association.—At the annual meeting of this association, held in Cheyenne, Wyo., September 9 and 10, the following officers were elected: Dr. Charles H. Soller, Evanston, Wyo., president; Drs. George P. Johnston, Cheyenne, Wyo., and Uhler D. McDowell, Longmont, Colo., vice-presidents; Dr. Elias S. Wright, Salt Lake City, Utah, treasurer; Dr. Henry La Motte, Salt Lake City, Utah, recording secretary, and Dr. Samuel D. Hopkins, Denver, Colo., corresponding secretary. The 1903 meeting will be held in Salt Lake City. In his annual address, the president, Dr. R. Harvey Reed, Rock Springs, Wyo., strongly advocated the establishment of an interstate board of medical examiners under national supervision, there being a board in each state appointed by the national government. This would entitle a physician practicing in one state to practice in all others where at present he must pass an examination in moving to a new state.

SECOND INTERNATIONAL CONFERENCE FOR THE PREVENTION OF SYPHILIS AND VENEREAL DISEASES.

Held at Brussels, Belgium, Sept. 1 to 6, 1902.

(From Our Special European Correspondent.)

Importance of Subject.

Without doubt one of the widest and most important subjects in the entire domain of medicine is that of the venereal diseases. Bound up in their study purely as topics of medical interest, there are many unknown and questionable problems, but when viewed in the larger social sense the complexity of their study becomes almost appalling. It is peculiarly fitting, therefore, that an international society should have been formed, and it is further a subject of great congratulation that it has had so propitious a beginning under the most generous and appreciative support of the Belgian government.

Delegates.

The representatives were gathered from all the countries of the civilized world, and the United States government was most ably represented by Drs. Valery Havard, U. S. Army, and Ezra Z. Derr, U. S. Navy. Among the members of the profession from this country were Drs. John Van der Poel, Ferdinand C. Valentine and Smith Ely Jelliffe, delegate from the American Medical Association, all of New York City. The medical profession were in the majority, but jurists, legislators, editors and delegates from benevolent and charitable societies, representatives of the police, etc., all contributed to give not only a distinctly cosmopolitan character to the gathering, but also gave the discussions a fulness and many-sidedness rarely found in such congresses. This tended to render the work of this conference less clear cut and decided than many of the members desired, but it had the advantage of showing the many-sided character of the questions under discussion and the desirability of making true progress.

The Work of the First Congress.

In the first congress, held three years before in Brussels, many preliminary subjects were discussed and settled to the satisfaction of all the members. These included the determination by:

1. General reports by leading specialists of the dangers to society of (*a*) syphilis; (*b*) gonorrhea; (*c*) the part that prostitution plays in the propagation of these maladies; (*d*) modes of dissemination other than prostitution.

2. To ascertain by joint study the condition of prostitution; the degree of frequency of venereal disease; the prophylactic measures taken to diminish these affections; the laws concerning prostitution, state, municipal, preventative or repressive; the police or medical supervision; opportunity for treatment in hospitals, and medical instruction concerning venereal maladies.

3. To consider six definite question: (*a*) Have those systems of official regulation which have been in vogue had an appreciable influence in the diminishing of venereal diseases? (*b*) How can the medical supervision of prostitution be made more effective? (*c*) From a purely medical viewpoint would it be of advantage to tolerate houses of prostitution or should these be suppressed? (*d*) In what manners can police regulation of prostitution be improved? (*e*) By what legal means might the number of women who try to make a living by prostitution be diminished? (*f*) What general measures can be taken to combat the spread of syphilis and venereal disease apart from those concerning the prostitute?

In the discussions held in 1899, it was shown that only by an international conference could any advance be made, and a large number of dependent issues were definitely settled. The larger questions of ways and means to be adopted effectively to combat the diseases were left, however, in as unsettled a manner as ever. Among the conclusions reached by the first conference may be mentioned the following: That municipal control of prostitution as practiced has not been a success; that the prostitution of minors, of all the forms of prostitution, is the most dangerous, both as moral and medical factors; that present modes of instruction in venereal diseases, both for the student of medicine and for the laity, are in part insufficient, unthorough and unpractical and that the statistical studies bearing on venereal diseases need to be established on more uniform lines if valuable comparisons are to be deduced therefrom.

Scope of Work.

Narrowing the field down as did the discussions of the first conference, the program of the second international meeting specially took up three main questions. The discussions were most active concerning that of public prophylaxis; the other questions, individual prophylaxis and statistics, were relegated to a subordinate position. The program outlined the following scheme:

Public Prophylaxis.

In that it has been a recognized function of the state to protect its citizens from the ravages of contagious diseases which by their frequency, or by the ease with which they are communicated, constitute a public danger, and further, to protect minors abandoned by their families:

A. What legislative action should be taken against venereal diseases, especially concerning 1, prostitution, (*a*) of minors; (*b*) maintenance of public peace and morality: (*c*) procurers and procuresses. 2. Apart from prostitution, (*a*) for the protection of minors of both sexes; (*b*) for the organization of free medical treatment in hospitals and by private charities; (*c*) for the control of wet nurses, of infection by midwives and nurses, of infection by arm-to-arm vaccination, of industrial infections; for the protection of servants in employment bureaus, lodging houses and hotels.

B. Should the transmission of venereal diseases be made a penal offense?

Individual Prophylaxis.

If it be the state's function to protect society it is a still greater duty of the individual to care for himself and to protect others, by avoiding all contact with a diseased person; even more careful should he be, if infected himself, to do everything in his power to prevent the infection of others. Therefore, by what means can the personal and social dangers of syphilis and gonorrhea be made known to the youth of the country at large and in what manner can gratuitous medical treatment further individual prophylaxis?

From a general standpoint there seems to be little doubt that if concrete suggestions could result from this most excellent program, the questions of sanitary and moral prophylaxis against syphilis and venereal diseases would be most satisfactorily answered.

Opening of Conference.

The second conference opened September 1, the Belgian State Minister of Hygiene, Baron von Brüggen officiating. M. Jules le Jeune, state secretary of Belgium, was re-elected president. Dr. Dubois Havenith of Brussels, to whose energy the success of the permanent organization of the Congress is largely due, gave a short address of welcome and read letters of regret from Drs. Fournier, Finger and Berenger.

Legal Regulation of Prostitution.

This was the first general discussion of the opening session. Inasmuch as the method of conducting a meeting of this kind differs so materially from similar meetings in the United States, a few words of explanation may be offered. For the most part, the papers presented by the members had been printed and were obtainable by the members of the Congress. Five or ten minutes were then allowed each member to defend his views or present his conclusions should he not have prepared a paper. This method does not permit of a clear-cut report and hence only those conclusions will be here presented which seem to the reporter of service to American readers.

There were two sets of partisans at the Congress, the one party termed the *reglementarists*, consisting of those who maintain that police or medical supervision and legal control are necessary for the suppression or diminution of venereal diseases, and the *abolitionists*, who hold that all legal recognition of prostitution is subversive of moral ends and tends to encourage prostitution; hence they claim that educational and moral factors are the most important features, and in the extreme wing of the abolition party, many English partisans go so far as to maintain that the suppression of prostitution is the only rational measure. As with the first congress it could be said that the bridging over the chasm between the two parties was not accomplished, but both reglementarists and abolitionists were apparently drawn closer together by reason of the discussions, one to insist more strongly on the advantages of education and moral factors and less on police autocracy; the other, to recognize that for certain conditions and in certain places and under certain circumstances, sanitary policing was necessary from the hygienic standpoint. Some of the conclusions of the individual speakers are given as indicating their authoritative position and their experiences.

DR. C. BOECK, professor of dermatology in the University of Christiania, spoke of the Norwegian system. There every village and town has a committee of morals, as it were, whose work is to provide instruction in matters pertaining to sexual morality and to venereal diseases. This instruction is molded to the conditions of each community. Further, every physician of Norway is compelled to report all cases of venereal diseases coming under his treatment.

DR. SANTOLIQUIDO, inspector of public health of Rome, is an ardent advocate of the abolitionist doctrine. He said that the Roman system of complete freedom of all supervision of prostitution combined with gratuitous dispensary treatment had proven satisfactory. There was, moreover, in Rome extended school instruction in elementary hygiene bearing on sexual matters.

Dr. T. BARTHELEMY, physician to St. Lazare, the prison hospital for Parisian prostitutes, spoke of the conflict of the laws of nature in the individual, and the laws of the collective body—society. The existence of venereal diseases was one of the great complicating factors of social development. Society, he said, quoting from Fournier, had at least three methods of conservation as regards the destructive agency, venereal diseases, moral means, medical measures and legal regulations. The following out of any one set of factors, he said, would not result in the ultimate good. Moral means, in their way, were good for those who could be so controlled; medical research was daily increasing the efficiency of the physician to combat the ravages of the contagious diseases, and administrative measures were absolutely requisite to complete society's defense against a disorganizing element, like venereal disease.

Because the present system of regulation in France has proven unsatisfactory, it is false to argue that the system is bad; it is rather the inefficient and half-hearted application of the system which permits of the lack of conclusive results. One class of individuals in particular, he believes, should be ruled with an iron hand, namely, the professional prostitutes, who, knowing they are diseased, nevertheless go about spreading infections. The members of this class, known almost to a person by the police, should be compelled to undergo treatment in closed hospitals until they are free from active infections.

DRS. DRYSDALE, London, and G. DEMETRIATADE, Bucharest, and MR. YVES GUYOT of Paris, editor of the *Siecle*, spoke of many of the practical difficulties of state control and argued that measures of education were more efficient in the end.

Control of Wet Nurses.

This aspect of public prophylaxis was very adequately discussed. Many believed that was a matter that could be brought under the control of the law.

DR. PETRINI, Galatz, professor in the University of Bucharest, prepared an elaborate report in which the prevalence of infection of syphilis by means of wet nurses was demonstrated. He showed that its frequency varied widely in different countries and hence an English view, for instance, of its comparative unimportance, drawn from the rarity of the infection in that country, was not a criterion for the whole, since it had been shown for Oriental lands and even for Paris, that it was an important element. He proposes a special medical service, working in co-operation with municipal authorities and having for its head a competent syphilographer. All children being nursed by wet nurses should be inspected regularly by representatives of this bureau and all wet nurses should receive authorization for their calling by the same bureau after rigorous medical inspection. Special provision should be made for syphilitic children.

General Regulation Measures.

One of the ablest reports presented to the Congress was that of PROFESSOR NEISSER, chief of the Breslau Clinic. His conclusions may be given in full, as they summarize the argument of the thorough-going reglementarist, of which party Neisser is perhaps the most widely-known exponent.

He concluded his communication by moving that: The Second International Congress for the Prophylaxis of Syphilis and Venereal Diseases is in favor of the following proposals, which shall be forwarded to the different governments:

I.—In the efforts which are taken to prevent the spread of venereal disease, the state should not rest contented with adopting measures for the restriction of prostitution, but should also take advantage of the many opportunities which are offered for contending against the spreading of venereal diseases.

II.—The most important and the most efficient means of preventing the diffusion of venereal disease is by familiarizing the public with the dangers and the importance of these maladies. Above all, young men should be instructed that not only is chastity and continence not detrimental, but that these attributes are desirable from the medical point of view.

III.—All measures adopted by the authorities with the object of preventing venereal disease and of contending with the melancholy consequences of prostitution should be sanctioned by law. The principles of these laws should be as follows: The administration of the law should be relegated to the parochial or municipal authorities of each district.

IV.—*A*. The law should guarantee to everyone suffering from venereal disease gratuitous hospital treatment, and should in no case demand from parents, from tutors or from fellow citizens of the patient any reimbursement for the expense of hospital treatment.

The state should defray the expenses of this gratuitous treatment, except where charitable societies exist for paying the expenses of such illness.

B. In every town, important community or district, hospitals should be erected—ultimately supported by state aid—where the gratuitous treatment of venereal disease and dispensing of medicine should be carried out.

C. Care must be taken that all arrangements prejudicial to the treatment of venereal disease at hospitals should be abolished. It is better to place these cases under the department of dermato-syphilography in general hospitals than to establish special hospitals; the nature of the disease should not be revealed to other patients, and the feelings of the sufferers should be respected.

V.—The following special measures should be adopted:

A. A Sanitary Commission should be appointed which should be the central administrative machine which should take all the necessary steps to ensure the treatment of venereal patients and the prophylaxis of those diseases.

B. Compulsory medical notification should be introduced in a two-fold form:

1. As regards the Sanitary Commission: (*a*) The composition of this commission. Like a legal tribunal, it should consist of judges and jurors. These should be selected mainly from those whose studies and professional and administrative capacity give them a special insight into the subject of venereal disease and of prostitution—doctors, clergymen and public officials.

(*b*) The programme of this commission: Statistics should be kept of all the patients who are notified (by name or otherwise). A sanitary supervision should be exercised over all the subjects of venereal disease who are notified by the doctors or the police as being dangerous to the public health.

This supervision should be carried out in the following manner:

1. The gravity of venereal disease and the necessity of continence should be impressed upon the patient, and in the event of the instructions being disregarded, the police should make a legal complaint.

2. The patients should be subjected to medical treatment, and when they are so subjected, they should either consult at their own expense a doctor nominated by the commission, or should be treated gratuitously at some public institution set on foot for the purpose.

At the same time a card should be given to those individuals brought up before the Sanitary Commission, which should make it certain that the patient was submitting himself with regularity to the treatment ordained.

3. The police should be informed of those patients who neglected to follow out the treatment prescribed, in which case a judicial complaint should be lodged against the offender for his neglect. Sanitary supervision should be kept absolutely separate from police supervision, and the *"police des mœurs"* should be abolished.

The compulsory medical notification should be made under a double form:

1. Without any indication of name, but in a manner sufficiently clear so as to avoid notifying the same patient twice. The doctors should declare to the commission, under this form, all the cases of venereal disease under their care. They should indicate: *a.* The Christian name, the initial of the name, the month and year of birth; *b.* The exact diagnosis; *c.* The date of infection, and *d.* The source of the infection.

This declaration is most important, since it will determine the amount of venereal disease existing. Ultimately this compulsory declaration might be replaced by a legal exactment which should compel the doctors to render a statement at certain intervals. The indication of the source of infection would render it possible to discover clandestine prostitutes, and also those men who have sexual intercourse despite their disease. One condition should be attached to this regulation; the patient must be given a guarantee that the person he denounces as having been the source of his infection should not be punished or rendered liable to damages.

2. The doctor shall indicate the name of the patient, when he has reason to think that the latter is continuing to have sexual intercourse, and is not observing the sanitary measures recommended him. The police should also have the right to signify to the commission those persons suspected of prostitution, but the commission alone can decide on the measures to be taken in respect of such persons.

C. A law should be passed forbidding anyone not in possession of a medical qualification from treating cases of venereal disease, under a severe penalty. Those persons, knowing themselves to be suffering from venereal disease and who continue to have sexual intercourse commit an offense even if contagion does not result.

VI.—It is necessary to give every medical man in his educational career adequate instruction in venereal diseases, and possibly a new diploma might be instituted for those who wish to specialize in the subject.

VII.—Prostitution in itself should not be considered as a misdemeanor; it should only be punished where the state or society are injured through the misconduct of the prostitute.

VIII.—The state has the right to deal with existing prostitution by measures specially directed against the dangers caused thereby; further, it has a duty to perform in preventing the spread of prostitution by reforms adopted for the protection of the community.

IX.—When anyone (man or woman) is repeatedly warned of the necessity of obeying the regulations indispensable from the sanitary point of view, if such person constantly disregards such warnings, or if a professional prostitute continually neglects to conform to regulations, if she causes a scandal in the street or if she provokes a disturbance, they should, on the complaint of the police, be condemned to detention of long duration, and in the event of the continuance of their misconduct should be placed under the supervision of the police. The system of short detention should be abandoned.

Prostitutes of incorrigibly bad character, who continue to practice their avocation in spite of their incurable condition, should be confined either permanently or for a definite period in asylums or houses of correction.

X.—Prostitutes placed under the supervision of the police should be subservient to the instructions of that body as regards their domicile and the practice of their profession. The sanitary supervision of these women should be entrusted to the Sanitary Commission.

(*a*) The practice of prostitution should be prohibited in houses where children are living, or where any other lodger raises an objection, and the landlords are responsible for the enforcement of this regulation.

(*b*) In order to render the practice of prostitution possible, while at the same time depriving it as far as possible of its publicity, certain houses of resort should be sanctioned.

(*c*) The supervision of the streets, a matter which is left to the police, should aim at restricting the public practice of prostitution.

Minors who are prostitutes, or are suspected of prostitution, or who are the subjects of disease should not be left to their own devices; they should be admonished but not punished; some law analogous to the Prussian law of July 2, 1900, should be adopted to ensure their compulsory education (girls so diseased should be submitted at the same time to treatment and to education, which treatment could be renewed either in hospital or outside).

Compulsory education of children who run the risk of moral degradation should be enforced (see Prussian law, July 2, 1900).

Besides these measures other steps should be taken for the prevention of prostitution:

1. Those minors who are placed under restriction should be detained in special educational establishments, and not in prisons or houses of correction.

2. The evils resulting from the overcrowding of rooms where children sleep should be mitigated.

3. Children from 14 to 18 years of age should be subjected to the same educational course as adults.

But if for some reason compulsory education can not be enforced, or if a young prostitute defies all efforts for the amelioration of her position, she should be treated in the same way as the older prostitute. There is no necessity for any difference in her treatment, considering that she is pursuing a course dangerous to the public safety and welfare; for young prostitutes are the most dangerous from the sanitary point of view.

Public Prophylaxis.

The entire second day was devoted to the discussion of public prophylaxis. Little that was new was contributed, but the opinions began to obtain a more concrete expression and the enthusiasm of the gathering was often awakened by a brilliant presentation of views.

Protection of Minors.

This subject was taken up with much enthusiasm as there was practical unanimity as to the great crime of prostitution in minors, as well as the general belief that of all forms of prostitution it was the most dangerous, both morally and hygienically.

DR. GOOD, Paris, speaking on this subject in conjunction with other matters, said that prostitution by minors should not be countenanced by law. As for an age limit, it might have to be made different for various countries. Eighteen was a good average. In case a minor persisted in pursuing a course of prostitution she should be taken care of in a special establishment, where she would be confined until she reached her majority. He was opposed to houses of tolerance. In certain instances where these could not be suppressed, he suggested a number of features, particularly concerning responsibility of the keeper of the house, the character of clothing, etc. The selling of liquors should be prohibited in all such places.

DR. L. PILEUR, Paris, and MRS. SHELDON AMOS, London, insisted on the protection of minors who might be forced into prostitution.

DR. F. VECHERE, surgeon to St. Lazare, Paris, spoke of the great dangers and the corrupting influences of the "free sidewalks." From the medical point of view, the street walkers often represent those most diseased and usually too ignorant to know it and who, therefore, rarely seek medical advice. The condition of the streets of London, he thought, were a disgrace to a civilized community, and such exhibitions of the flagrant traffic in prostitution had a much more degrading effect on the moral youth than the legalizing of prostitution might have on an already corrupt individual who had made up her mind to follow the trade whether it was legal or not. He was inclined to be pessimistic regarding the moral reform of the major portion of prostitutes, but this was no argument against his most thorough belief in the use of all educational measures. From a reglementarian standpoint he would make two classes of prostitutes: For those who of their own will came for medical treatment he would have free dispensaries and afford them every opportunity to get well, permitting perfect liberty, while for the prostitute who refused to be treated and yet pursued her calling, he advocated forcible detention in closed hospitals until their malady was rendered non-communicable.

DR. BLASCHKO spoke of the dangers of autocratic regulation of prostitution if the ordinary police were permitted to assume control. Reglementation as carried out, he thought, showed more failures than successes.

DR. O. LASSAR, Berlin, spoke of two classes of prostitutes: The one, who by reason of misery and bad economic conditions was driven to resort to it to keep herself alive, and another class that voluntarily took up the life. Those of the former class should be helped to regain their position in life by philanthropy of the most helpful character. Prostitutes of the other class should be tolerated and afforded an opportunity to pursue their avocation in such manners and in such places as would permit of the applications of principles of responsibility.

DR. GASTON, chief of clinic at St. Louis, Paris, and MRS. BIEBER-BOHM of Berlin, president of the Society for Jugendschutz, spoke on the subject of the protection of minors. Greater stringency in the matter of seduction was suggested, and larger philanthropy to help the seduced to regain a foothold in society. Better dwellings and better educational facilities were desirable.

Regulation Inefficient.

DR. LANDOUZY, professor of the Faculty of Medicine of Paris, said that the present state of affairs was bad without a doubt. The state should be held responsible for the health of its citizens, but the methods of regulation at present in vogue, in France at least, were unsatisfactory. Such regulation took cognizance only of registered prostitutes and of only a small portion of these. Apart from the large question of morality the State should recognize only the fact of contamination and of prophylaxis, and should regulate the venereal

diseases much as other contagious maladies, such as tuberculosis, typhoid, etc., are regulated. He further advocated the framing of laws which would make the communication of venereal disease a civil offense. This matter of civil damages is discussed at length in the report of the fourth day.

(To be continued.)

CANADIAN MEDICAL ASSOCIATION.

Thirty-fifth Annual Meeting, held in Montreal, Sept. 16 to 18, 1902.

The President, Dr. Francis J. Shepherd, in the Chair.

This meeting was unusually well attended. Resolutions of regret at the death of Virchow were passed. After the business session of the first morning the association divided into the medical and surgical sections.

Tuberculosis.

DR. H. A. LAFLEUR, Montreal, presented a man in middle life who had splenic anemia.

DR. J. H. ELLIOTT, of the Gravenhurst Sanitarium, contributed a paper on "Some Further Results in the Treatment of Tuberculosis."

Five years' experience with 555 cases has shown that almost all of the patients discharged "apparently cured" remain perfectly well; of those with "disease arrested" many have progressed to good health at home by following the rules of life learned at the sanitarium, renewed activity of the disease, when occurring, having been as a rule due to unfavorable surroundings, or the necessity of again taking up unsuitable work.

Not the least important part of the work of a sanitarium is its educative influence. Each patient who returns home is a teacher of the value and importance of a hygienic life, to those who wish to retain their health, as well as those who are not strong. Experience is demonstrating the immense amount of influence for good which results from a properly equipped and conducted sanitarium. It is unfortunate that there are not more of them. It is hoped that the attention of our philanthropists will be drawn to the crying need of such institutions, and that ere long we shall have a number of them in the various provinces of Canada.

DR. OSLER congratulated Dr. Elliott on the promising results which he has obtained. Two important points should be kept well in mind: First, early diagnosis, and second, getting patient as soon as possible under proper professional control.

DR. MCPHEDRAN, Toronto, emphasized training patients how to care for themselves at home. He believes that the neighborhoods of sanitaria are always areas where tuberculosis is always diminishing.

DR. JOHN HUNTER, Toronto, read a paper on "Pleurisy as Associated with Tuberculosis." At least two-thirds of tubercular pleurisy cases are curable. The rapidity of the filling of the pleural cavity is especially characteristic of tubercular cases. As to treatment, during convalescence, deep breathing should be practiced very assiduously, and inflation with rubber bags is a valuable exercise. Then change to a suitable climate should be insisted on if the progress towards recovery be retarded.

Clinical Notes on Blood Pressure in Disease.

DR. A. E. ORR, Montreal, showed Gaertner's tonometer and the manner of its use. Four hundred patients at the Royal Victoria Hospital, Montreal, were experimented on. The normal pressure was found to be 110 to 120. Seventy cases of typhoid fever were recorded in different stages, showing an average blood pressure of 104.5 mm. It was highest, but still subnormal, in the first week. There was only one death, which took place in a man of 35 years, when pressure was 105 on the tenth day, 110 on the twenty-first day; then three hemorrhages, and on the twenty-fourth day a fatal hemorrhage.

A large proportion of these had cold baths or cold sponging. Nineteen cases of chronic nephritis were recorded. Of this group the highest was 260; average 208.5. Of acute nephritis there were seven cases; only three of these showed high pressure. Of arteriosclerosis 27 cases were recorded; highest 110, 16 being 150 and over; 4 from 130 to 145; 3 from 110 to 125; 4 subnormal. The highest was in a man of 72; glycosuria, no albumin.

Valvular diseases of heart, 48 cases, including 11 cases of mitral regurgitation. In mitral stenosis 8 cases were recorded, 6 being normal. Mitral stenosis with mitral regurgitation, 14 cases. Eleven had practically normal tension. Aortic insufficiency, 3 cases. Myocarditis, 4 cases; one man, aged 60, having pressure of 80. Hypertrophy and dilatation of heart of unknown causation, 2 cases 120 and 110, respectively. There were 18 cases with acute lobar pneumonia, with an average for the series of 92.7; only one death. Pleurisy 16 cases. Neurasthenia 18 cases, 13 having normal pressure; 3 from 135 to 140; one of 160. In malignant disease, cancer of viscera, there were no high readings. Anemia 6 cases, all being normal. Addison's disease, both in early stage; both normal. Puerpera hemorrhagica, one case; normal. Puerperal septicemia, one prolonged case, ending in recovery, had extremely low blood count—930,000; above normal. One gall-bladder case with suppuration—a blood pressure of only 50 ten days before death.

One lead poisoning; 3 of jaundice; 1 of tubercular meningitis,; 2 of diabetes; 2 of exophthalmic goiter; 8 of acute articular rheumatism, heart not affected; chronic articular rheumatism, 4 cases, all normal; gonorrheal rheumatism, 8 cases, 6 normal; rheumatoid arthritis, 16 cases, 6 normal; gout, 4 cases.

There was 1 case of hemiplegia and 14 of tabes dorsalis, 11 normal pressure; cerebral tumor, 8 cases; general paralysis of insane, 1 case; Friedrich's ataxia, 1 with albuminuria, 140; 1 acute ascending paralysis, 140; 2 cases tic douloureux, one 130 during the attack. There was one case of epidemic influenza and 36 miscellaneous cases.

In discussing this paper Dr. Osler considered it to be the best contributed article on the subject.

Telephonic Properties of the Paralyzed Bowel.

DR. GEO. A. PETERS, Toronto, read a paper on "The Telephonic Properties of the Inflamed Abdomen; a Sign not Hitherto Described, Due to Paralysis of the Bowel in Peritonitis." In auscultating the abdomen with a view to ascertaining whether there was paralysis of the bowel in cases of appendicitis, typhoid perforations, traumatism, and other conditions which stand in a causative relation to peritonitis, Dr. Peters has observed that where the gurgling sounds due to the passage of gas and liquid in the bowel are absent from paralysis, the heart sounds are invariably very plainly present over the whole abdomen. In intense cases, particularly in children, both inspiratory and expiratory breath sounds may be heard. Dr. Peters' explanation of the phenomena is: unlike the healthy bowel—where the gas is retained in certain well-defined and circumscribed compartments, each constituting a complete retainer in itself, with vital walls possessing a muscular tonicity under nervous control—the paralyzed bowel, by reason of its flaccid and atonic condition, permits an entire change in the disposition of the contained gas; the entire distended abdomen becomes, practically and acoustically considered, a continuous column of air or gas, of the precise principle of the stethoscope. The effect of this is further heightened by the rigid abdominal wall, which acts as a sounding board. The prognostic significance would seem to indicate an unfavorable termination in those cases where the sign is very well marked in cases of septic origin.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-Second Annual Meeting, held at Allentown, Sept. 16 to 18, 1902.

The President, Dr. F. P. Ball, Lock Haven, in the Chair.

DR. E. H. DICKENSHIED, president of the Lehigh County Medical Society, and Hon. F. E. Lewis, mayor of Allentown, made addresses of welcome.

Reports of Secretary and Treasurer.

DR. C. L. STEVENS, secretary, reported that the fifty-four affiliated county societies were, with a few exceptions, in a

healthy condition, the present membership being 3518, a net gain of 118 since the last annual meeting. The actual membership numbers more than the number stated since a few societies had made no report since March. If the proposed plan for district meetings were adopted by the society and seconded by the county societies it was hoped that many would be added to the present membership.

DR. GEORGE B. DUNMIRE reported a satisfactory balance in the treasury. One county was reported for non-payment of dues.

Report of Committee Appointed to Examine School Text-Books on Anatomy, Physiology and Hygiene.

DR. L. J. LAUTENBACH reported that the committee had obtained about fifty works on this subject, the majority of which were inaccurate and full of exaggerations, especially on the subject of alcohol and tobacco. It was recommended that the supervision of text-books on these subjects be intrusted to medical men rather than to the laity. The appointment of a committee was suggested to procure an amendment of the Pennsylvania Temperance Education Law so that pupils might study the subjects of anatomy, physiology and hygiene from text-books meeting the requirements indicated. The report was accepted and the committee continued.

Report of the State Board of Medical Examiners.

DR. HENRY BEATES, JR., reported that the board had held two examinations since the last meeting of the Society, as follows:

DECEMBER, 1901.

College.	No. Examined.	Passed.	Failed.	Gen. Aver'ge.
University of Pennsylvania	14	14	..	82.78
Jefferson Medical College	15	13	2	80.21
Medico-Chirurgical College	15	11	4	76.39
Woman's Medical College	..	..	..	.....
Western University of Pennsylvania	19	14	5	76.25

JUNE 1902.

College.	No. Examined.	Passed.	Failed.	Gen. Aver'ge.
University of Pennsylvania	89	87	2	84.54
Jefferson Medical College	86	83	3	82.47
Medico-Chirurgical College	76	68	8	80.45
Woman's Medical College	19	19	..	82.91
Western University of Pennsylvania	59	49	10	79.31

Advance in standard was announced both as to preliminary qualifications required for matriculation and of medical education by all of the medical colleges of Pennsylvania. It was regretted that the state, as a whole, was not on the higher plane occupied by New York, followed by Ohio and Minnesota, and to be followed by Illinois in 1903. The hope was expressed that the influence and co-operation of the Medical Society of the State of Pennsylvania would aid in placing the standard of requirements by medical colleges of Pennsylvania second to none.

Miscellaneous Business.

After considerable discussion the report of the committee to suggest changes to the by-laws was adopted as a whole, with the exception that the time of meeting be changed from the third week in September to the fourth, unless it is otherwise changed by vote of the executive council.

The assessment for the previous year beginning with July last was fixed at $1.50 per capita.

The appropriation of $2000 to the Rush Monument Fund placed in the control of the board of trustees remains at 4 per cent. interest, amounting in July last to $179.25. In the matter of recommending the publication of a directory of the physicians of the state by the society the board wished to report progress.

DR. SAMUEL WOLFE, Philadelphia, offered a resolution that the society endorse the report of the committee on school text-books, and that the committee be given full power to use all proper means to have the school books revised so as to conform to the suggestions indicated in their report, and should they deem it necessary, present to the next Legislature such amendments to the Act of the Legislature of April 2, 1885, "Relating to the Study of Physiology and Hygiene in the Public Schools of the Commonwealth and Educational Institutions receiving Aid from the Commonwealth," as will bring about the desired result. On motion, the resolution was referred to a committee appointed by the president, as follows: Drs. William T. Bishop, S. M. Woodburn, and S. P. Heilman.

DR. CORNELIUS SHEPHERD, delegate from the Medical Society of New Jersey, was introduced to the society. He spoke in favor of medical reciprocity on a proper basis. He maintained that every member of the medical profession, after properly qualifying himself, should connect himself with his district society, become a member of his state society and then of the American Medical Association. When thus organized the medical profession would have effective influence in the enacting of laws for the good of the community.

Resistance of the Eye to Injury.

The scientific papers and discussions were led by "The Ability of the Eye to Withstand Effects of Injury and Diseases." Dr. P. J. Kress, Allentown, in this paper referred to the elaborate system of Nature in the intercommunicating vessels for nourishment and drainage of the eye. The formation of the eye during embryonic state has a vast influence on its future ability to resist disease and injury, and since degeneracy weakens the power of resistance, heredity is of vast importance. Syphilis and tuberculosis manifest themselves in corneal involvement and in a weakened power of the coats of the eyeball. It was pointed out that toxic elements produced from diseases of the liver and kidneys cause degenerative changes in the eye with hemorrhages, atrophy and paralysis. Absorption of ptomains from gastric disturbances and badly-digested food cause eye lesions. Other dangers to the eye were pointed out, from adulteration of articles of consumption, poisoning by inhalation of fumes while working in the arts, and also from disturbance of the nervous system.

Orbital Cellulitis After Bowman's Operation with Use of Leaden Style.

DR. WALTER B. WEIDLER, Lancaster, reported this case because he had not been able to find any record of such a case. Fuchs states that orbital cellulitis is possible from the rupture of the lachrymal sac posteriorly, but he further states that this is very rare indeed. Bull of New York, in Norris and Oliver's "System of Diseases of the Eye," divides the causes into two classes: (1) Idiopathic, and (2) traumatic. The patient gave a history of epiphora O. S. for the past five years; had been Bowmanized three years before. Recurrence took place at this time with the same condition O. D. The treatment is given in detail. Though there was gradual subsidence of the cellulitis there was no recovery of vision. Dr. Weidler also reported the case of a woman, aged 41, of good family history, with complete bitemporal hemianopia. Diagnosis was made of chiasma.

(To be continued.)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Fourteenth Annual Meeting, held in Washington, D. C., September 16 to 18, 1902.

The President, Dr. Edwin Ricketts, Cincinnati, in the Chair.

Welcome.

An address of welcome was delivered by Surgeon-General Geo. M. Sternberg, U. S. Army (retired), Washington, which was responded to by the president.

Pelvic Diseases in the Young and Unmarried.

DR. C. L. BONIFIELD, Cincinnati, in his paper dealt only with gynecological diseases which occurred in women not subjected to sexual intercourse. Physicians were now more frequently consulted about such troubles than formerly, but this was probably because the modern woman bore discomfort less well than her ancestors did, rather than that there was an increase in the number of patients suffering from such disorders. Disorders of menstruation, undeveloped uterus, tubercular disease of the appendages, and acute displacements were the most common pelvic affections in such patients. When menstruation did not make its appearance at the expected age a thorough investigation of the general condition of the patient was indicated, and her health should be made as nearly perfect as pos-

sible. A local examination was not required unless there were severe local symptoms. The same was true of amenorrhea occurring after menstruation had been established. The possibility of pregnancy should always be borne in mind. Dysmenorrhea might be of constitutional or local origin. Local treatment was not required in the first variety, and the endometritis which caused a majority of the latter cases could often be relieved by hygienic and medicinal treatment. Menorrhagia was often caused by a depraved state of the blood, or an interference with its circulation by disease of the heart, liver, or kidneys. The uterus, whose development had been arrested at the time of puberty, was the most important type. It was generally sharply anteflexed, but occasionally retroflexed, the cervix was long and narrow and the body dilated. Dysmenorrhea was a prominent symptom. Thorough dilatation, curettage and tight packing, repeated one or more times, if necessary, constituted the best treatment. Tuberculosis of the pelvic peritoneum was often mistaken for typhoid fever or appendicitis. When tubercular peritonitis began in the uterine appendages they should be removed by abdominal section. Acute prolapse or retroversion of the uterus was found as a result of a fall or heavy lifting in young women of lax fiber. Young unmarried women are best examined under anesthesia, and when possible the treatment of their local disease should be operative.

Removal of the Gall-Bladder Through the Lumbar Incision.

DR. WALTER P. MANTON, Detroit, reported a case of removal of the gall-bladder through the lumbar incision. The patient, aged 38, the mother of five children, with two abortions, had never been robust, but was able to attend to her domestic duties. She had suffered from a number of gastric attacks, but there had been an entire absence of symptoms pointing to disease of the biliary tract. Examination showed the left kidney to be loose, while the right kidney appeared to be double its normal size, displaced downward and inward, and with certain projections which led to the diagnosis of nephroptosis, with probably cystic metamorphosis. At the operation, through the nephropexy incision, the fatty capsule of the kidney was found to be imbedded in a mass of adhesions which had given rise to the appearance of the enlargement. Below the kidney pouch a distended gall-bladder containing fluid and nineteen gallstones the size of hazel-nuts was found, surrounded by adhesions. This was enucleated, tied off at the cystic duct, and removed. The fluid contents of the sac contained a bacillus having the morphology and staining qualities of the colon bacillus, and a long, large rod which stained violet by Gram's method, but no staphylococci or streptococci. The kidney capsule was split and peeled off to the lateral line, fixation sutures introduced, and the organ returned to its place. A strip of gauze for drainage was carried from the upper angle of the external wound to the stump of the cystic duct. The patient made a good recovery. It was impossible to state whether the condition was a congenital anomaly or the result of the walling-off of the gall-bladder by adhesions. The operation was entirely extraperitoneal. This was the first recorded instance of extirpation of the gall-bladder through the lumbar incision. The operator believed that on account of the anatomical position of the gall-bladder in uncomplicated disorders of the biliary tract, the anterior abdominal incision was the one of choice, but that when nephroptosis or a morbid condition of the kidney existed demanding operative treatment, together with enlargement of the gall-bladder from stones or fluid accumulation, the lumbar route offered certain advantages. He paid tribute to Edebohls as the pioneer who had opened up this previously uncultivated field of surgery.

Drainage in Abdominal and Pelvic Surgery.

DR. JOSEPH PRICE, Philadelphia, stated that the more progressive and successful specialist doing painstaking operations in every detail, where filth and complications, or adhesions, were found to exist, practiced most extensive sponge packing or drainage. The modern operator did the same by his gauze pack or the dry operation. A number of operators doing fairly good work by the suprapubic route condemned or partially rejected drainage. He said some of them never learned and never would learn how to handle drainage well. After abandoning the suprapubic route, these men were placed in the uncomfortable position of admitting that drainage did what they had refused to do by suprapubic surgery. Nothing had pleased the speaker more in the last few years than the knowledge of the fact that the young school of surgeons used drainage with great success and skill in spite of the fact that these young men had been under the instruction of the men about the country and in the hospitals who condemned it. Almost all the secondary operations were coming from operators who opposed drainage or practiced it only when they were compelled to do so, and he thought it was curious that these men favored drainage when they abandoned procedures or practiced incomplete ones.

The Vaginal Route for Operations on the Uterus and Appendages.

DR. JOSEPH H. BRANHAM, Baltimore, stated that the most common condition threatening the life of gynecological patients, caused by gonorrhea, abortion, tuberculosis and other conditions not always discernible, and often requiring prompt action to save life, was pelvic inflammation. Here the vaginal method of treatment made its best showing. He had operated on more than one hundred cases by this method, with but three deaths. He concludes that vaginal drainage is the natural method. It is far more effective and safer. Extensive pelvic inflammation, associated with pus formation, rapidly wall off the general peritoneum. This wall should not be broken through and can not be interfered with without danger of general peritonitis. Opening through the vagina was associated with a minimum amount of shock and hemorrhage, and was thus indicated in extreme cases associated with severe toxic symptoms.

Ice Following Abdominal Section.

DR. FRANK F. SIMPSON, Pittsburg, Pa., advocated the local use of ice for the relief of pain, to prevent or control peritonitis, and to limit the morbid products following operation. These sequelæ were due almost wholly to inflammation, which was very slight and purely traumatic, in the vast majority of cases, but might be bacterial in a very few others, and in unclean cases. This use of ice he began after observing its effects in several hundred cases of pelvic peritonitis of all grades prior to operation. In this connection he said: "After having seen many grave cases of this kind yield so favorably to this measure, and having seen a few of them die later from peritonitis following an abdominal section, which removed the great bulk of filth, leaving but little behind in a fairly clean cavity, it seemed to me that with the same infecting organisms active in large numbers before operation, and in small numbers after operation, we might expect like results if the same treatment were employed in the two classes of cases. And further, that by beginning the use of ice before peritonitis had actually developed, we might succeed in preventing that condition." He further asserted that the use of ice after operation in some hundreds of cases during the last four years had been highly satisfactory. Regarding theoretical objections, he said that they disappeared as physicians became familiar with the use of ice. In his experience no injury to the skin had followed its use; the healing of wounds had not been retarded by it; and no depression of the general system had been noticed. He attributed the beneficial effect of cold to its direct and deep penetration. This opinion was based on the known effects of cold on surface inflammation; on the satisfactory results he had obtained at the bedside; on the observations of Boklikoff, who showed that cold actually penetrated deeply into the human cavities and tissues, and on his own experiments on dogs, which showed that by the local use of ice there could be produced in the abdominal cavity and without detriment to life or tissue, such a degree of cold as would retard the growth of pathogenic bacteria and contract the blood lymph channels, thus depleting the hyperemic areas and checking serous weeping into the peritoneal cavity. He related several cases in substantiation of his views and gave in detail his experiments on dogs.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Diet in Disease.

Proper digestion depends on the ability of the gastric juice and the intestinal secretions to transform starches, sugar, fats, albuminoids, etc., into an assimilable state. The proteid substances are chiefly acted on by the gastric juice and converted into peptones. The bile and pancreatic juice favor the emulsification of the fats, while the starches are acted on by the intestinal fluids and are changed into maltose and glucose. In disease the normal gastrointestinal secretions are so disturbed as to require due diligence on the part of the practitioner in prescribing that form of diet which will be most easily digested and rendered assimilable. Suggestions then as to the preparation of food for the sick-room are not of lesser importance, but, on the other hand, care in dietetics is, in association with the close observation of elimination by the skin, kidneys and bowels, the keynote to success in therapeutics. The following methods may be employed in the preparation of the different foods:

BARLEY WATER.

This may be made by grinding one tablespoonful of pearl barley in an ordinary coffee mill, add one half pint of water and boil for fifteen or twenty minutes and strain the liquid off and add salt. This preparation is recommended by Thompson in preference to oatmeal water whenever the bowels are loose. The latter prepared similarly is preferred when constipation is present. Ringer recommends the following formula for barley water: To a tablespoonful of pearl barley washed in cold water add two or three lumps of sugar, the rind of one lemon, and the juice of half a lemon. On these pour a quart of boiling water and allow the mixture to stand for six or seven hours and then strain. The barley water not used at one feeding should not be used later. Half an ounce of isinglass may be boiled in the water if desired.

RICE WATER.

This may be prepared by adding one heaping tablespoonful to one quart of water and boiled down to one pint. Rice itself contains practically no fat nor proteid substance. It is said by Davis that two and one-half ounces of boiled rice are disposed of by the stomach in three and a half hours and are absorbed very completely by the intestine. Rice is most easily assimilated when the grains are swollen and softened; this is best accomplished by steaming. The digestibility of boiled rice is said to be improved by adding a little butter, which coats the kernels and prevents their forming a pasty mass.

ARROWROOT WATER.

This may be prepared by adding one teaspoonful of the arrowroot flour to one pint of water and boiling for five or ten minutes. Arrowroot, when cooked, is more digestible than any other starch. It may be used in making gruel and when prepared in the form of a jelly it is said to keep longer than any other form of starchy foods. It is of service in the severer forms of gastritis where the irritability of the mucous membrane of the stomach is so great that other articles of diet can not be borne.

ALMOND BREAD.

Hare recommends the use of almond bread as an article of diet in diabetes. It may be prepared by taking one quarter of a pound of blanched sweet almonds and beat them as fine as possible in a stone mortar; remove the sugar contained in this meal by putting it in a linen bag and steeping it for a quarter of an hour in boiling water acidulated with vinegar; mix this paste thoroughly with three ounces of butter and two eggs. Add the yelks of three eggs and a little salt and stir well; whip up the whites of three eggs and stir in. Place the dough in molds and dry by a slow fire.

BEEF PREPARATIONS.

Meat may be prepared for the sick-room in either the solid or liquid form. Meat powders of various descriptions are on the market and are of use when it becomes necessary to administer food in a concentrated form.

Scraped beef is not infrequently prescribed by the physician in certain disorders of digestion. When finely divided it is easily digested, for by so preparing with a dull knife the indigestible connective tissue sheaths are eliminated and the pulp remains, which may further be prepared by running through a sieve. This preparation is of great value as an article of diet in dilatation of the stomach, gastritis and other diseases. It may be taken in the form of a sandwich, spread on bread. Meat can be easily powdered by drying boiled beef over a water bath and powdering it.

Mosquera's beef meal is a powdered meat prepared by digesting tender, lean beef with the juice of the pineapple and dried. By this means the muscle fiber is partly converted into peptones. It is an odorless and a tasteless preparation containing at least 80 per cent. of nutriment. It can be prepared by simply mixing it with water or warm milk or in cocoa. Like scraped beef it is a valuable article of diet in the different forms of gastric troubles, such as gastritis, ulcer and carcinoma or in any disease where the digesting power of the stomach is greatly diminished.

Somatose is another preparation which contains about the same per cent. of nutritive substance. It has but little odor or taste and is taken, without much hesitation, by patients. It may be given in the powder form spread on bread, about one teaspoonful at a time, or better, in the liquid form mixed with plain warm water, milk, soup or cocoa.

Beef juice is prepared by taking a thick tender piece of steak and broiling it over a quick fire so as to coagulate the outside only. The juice is then extracted by cutting the steak into small pieces and squeezing them in an ordinary lemon squeezer or a press especially constructed for that purpose. One or two tablespoonfuls of the juice can then be properly diluted and seasoned to suit the individual case. This preparation is of service in the conditions mentioned above; in the different infectious diseases and in the feeding of infants after they have reached one or two years of age.

Beef tea is prepared by taking one pound of lean beef, mincing it, and putting it, with its juice, into an earthen vessel containing about a pint of tepid water; let it stand for one hour and then strain, squeezing out all the juice. Place on the fire and raise slowly to the boiling point, stirring it briskly all the time.

EGGS.

Raw eggs, according to Dr. N. S. Davis, may be given directly from the shell, or seasoned with pepper or salt, or added to bouillon, coffee or milk. A very palatable preparation is made by shaking an egg thoroughly with lemon juice and sugar, and diluting the mixture with either plain or carbonized water. A very nutritious mixture can be made by shaking an egg with milk and flavoring the mixture with nutmeg or cinnamon.

Eggnog is best made by adding the yelk of an egg, well beaten, to a glass of milk to which a tablespoonful of sherry wine or whiskey has been added. Sugar and the white of the egg should be beaten together and added by stirring. Sometimes the addition of a tablespoonful of lime water is of service in aiding its digestibility. Raw eggs, according to Thompson in his "Pract. Dietetics," are often prescribed when a nutritious, highly concentrated diet is desired, and in cases of tuberculosis, some forms of anemia, and in the various wasting diseases. Sometimes from eight to ten or twelve eggs are given daily if they can be digested.

In forced feeding of melancholia or tuberculosis and non-febrile cases, eggs are very nutritious, prescribed in the form of eggnog. In the fevers, however, according to the author, eggs are liable to produce nausea and perhaps vomiting; for this reason whole eggs are unfit for fever patients, and if used at all the whites alone should be used, prepared in the form of an eggnog.

GELATIN.

Gelatin can be used in the form of coffee jelly prepared after the formula of the U. S. Army hospitals as given by Thompson: Soak one half an ounce of gelatin in one-fourth cup of cold water for half an hour; pour on one cup of boiling water, then add one-half cup of strong coffee and two tablespoonfuls of sugar. Strain it through a cloth into a dish in which it may be cooled in a pan of ice water or in a refrigerator. A wine jelly can be similarly prepared by adding one-half cup of sherry wine and a small piece of cinnamon to flavor.

Congestion of the Eye.

Leidy, in *Amer. Med.*, says: In congestive conditions of the eye of gouty origin with pain and tenderness, I have found prompt relief not only from pain, but almost instant clearing of the conjunctiva and associated vascular system, the congested eye clearing and appearing almost normal, from the instillation of 2 or 3 gtts. of the following:

R.	Formalin	005
	Cocain hydroch.	1
	Aq. destil.	10

Pruritus.

Hartzell, in *Ther. Gazette*, recommends the following:

R.	Carbolic acid	℥ss	2
	Glycerin	℥ii	8
	Camphor water, q. s. ad	℥iv	120

This is mopped on the affected parts every 3 or 4 hours; or:

R.	Carbolic acid	gr. 10-15	.65-1
	Starch		
	Bismuth subnitrate, āā	℥ii	8
	Petrolatum	℥ss	15

Offensive Breath.

The Practitioner publishes the following:

R.	Solution of chlorinated sodium	℥i	4
	Peppermint water	℥vi	180

To be used as a gargle.

Tympanites.

The following is a widely used and well recommended formula:

R.	Mag. sulph.	℥ii	60
	Spts. terebinthinæ	℥i	4
	Tinct. asafetidæ	℥iss	45
	Mucilag. acaciæ	℥ii	60
	Aq. destil. q. s. ad.	O. i	480

M. Sig.: As an injection by a high rectal tube.

Medicolegal.

SOME 1902 LEGISLATION.

Maryland—Medical Practice Act.—Chapter 612 of the Laws of Maryland of 1902 repeals the old, and enacts a practically new, law. The two separate boards of medical examiners are retained—one representing the Medical and Chirurgical Faculty of the State of Maryland, and one representing the Maryland State Homeopathic Medical Society. No member of any medical college or university, who passes on the qualifications of graduates of any medical school, is eligible to serve as a member of either board. Each of the examining boards will prepare a schedule of written examination on anatomy, physiology, medical chemistry, surgery, practice of medicine, materia medica, therapeutics, obstetrics and pathology, and the same standard of excellence shall be required from all candidates. In the departments of therapeutics and practice, the question shall be in harmony with the tenets of the school selected by the candidate; the standard of requirements therein to be established by each board for itself. The examination must be fundamental in character. Hereafter a person desiring to practice medicine in Maryland must make a written application for license to the president of the board he may elect, accompanied by evidence as to good moral character, etc.; that he has obtained a competent common school education, and has either received a diploma conferring the degree of Doctor of Medicine from some legally incorporated college in the United States or a diploma or license conferring the full rights to practice all the branches of medicine and surgery in some foreign country; said diploma, if from a college in the United States, must have been conferred by a legally incorporated college requiring a four years' standard of education as defined by the American Medical College Association or the Intercollegiate Committee of the American Institute of Homeopathy, respectively; provided, that this requirement shall not apply to any physician who shall, prior to the passage of this Act, have practiced outside of this state for at least three years, and who shall have been duly registered or licensed in the place where he has so practiced; provided, further, that two courses of medical lectures, both of which shall be either begun or completed within the same calendar year, shall not satisfy the above requirements; provided, also, that in the case of students who at the time of the passage of this Act shall be in their second year in a medical college, a three years' course of study, or attendance on three courses of lectures delivered in different years, shall satisfy said requirements. Proof of the qualification of applicants, as above, shall, if required, be made by affidavits at the time of the making of said application and payment of fee as provided. When the applicant shall have passed an examination satisfactory to the board, the president thereof shall grant to such applicant a license to practice. If the president of either board of medical examiners shall have refused any application, either for want of the qualifications necessary to entitle such applicant to an examination, as hereinbefore provided, or for want of proficiency of such applicant on being subjected to an examination, then the president of neither of said boards shall entertain or pass on a subsequent application from said applicant until after the expiration of six months from the rejection of said previous application. The respective boards are authorized to license, without examination, applicants who present proper certificates of proficiency and professional standing at the time of application, issued by boards of medical examiners of the District of Columbia and of other states, the requirements of which are of as high a standard as those governing the boards of medical examiners of Maryland, provided such boards of such states or districts grant the same privileges to licentiates of the examining boards of Maryland, such applicants, however, being still required to furnish the same proof of qualifications required of other applicants by this section. Medical students at the end of their second year of study, who have, as verified by the certificate of the dean of the college which they have attended, completed the studies of anatomy, physiology, medical chemistry and materia medica in said college, shall, on application, be examined in such studies by the state licensing board, the result of said examination to be considered as part of the final examination, the full regular fee to be paid at this time, no part thereof to be returned, but placed to their credit for the remainder of the examination yet to be taken. Medical students who have, as verified by the certificate of the dean of the college which they have attended, completed a full four-year course of studies and lectures, but who have not yet received their diplomas, shall, on application, be examined in the branches enumerated in Section 42 by the state licensing board, the final certificate and license of the said board being withheld until the diploma of the proper medical college, with the candidate's name inscribed, be produced to the secretary of the board. Diplomas presented by graduates of foreign colleges shall be accepted if a course of four years' study has been required by said foreign college before issuing such diploma. Any physician who may change his residence from the District of Columbia to the State of Maryland, or who while living in the District of Columbia shall desire to practice medicine or surgery in the State of Maryland, shall, on application, be entitled to a license, without fee and without examination; provided, that the application be properly indorsed at the time it is presented by the examining board of the District of Columbia, certifying to the proficiency and professional standing of the applicant; and provided, further, that the examining board of the District of Columbia shall, under the laws thereof, grant like and equal privileges to licensed physicians of the State of Maryland. The examination fee is twenty dollars. Any person receiving a license shall file the same at once with the

Clerk of the Circuit Court of the county in which he or she may reside, or with the Clerk of the Superior Court of Baltimore city, if said person shall reside therein. In case of a permanent removal of residence to another county or to Baltimore, the license, or a certified copy thereof, shall at once be filed with the Clerk of the Circuit Court of the county or city. Either board may, by a vote of five members, revoke any license which it has issued, and may cause the name of any physician licensed by said board to be removed from the register of the licentiates of the city or county where it may be recorded for any of the following causes: The use of fraud or deception in passing the examination, habitual drunkenness, criminal abortion, conviction of crime involving moral turpitude or unprofessional or dishonorable conduct. Before proceeding to revoke any such license, the person against whom complaint is made shall be furnished with a copy of the complaint and charges made against him, and shall be given an opportunity for a hearing before the board, in person or by attorney, and at such hearing testimony may be offered for and against the accused. Any person shall be regarded as practicing medicine within the meaning of this Act who shall operate on or prescribe for any ailment of another, or who shall append to his or her name the letters M.D., or prefix the word Doctor, or the abbreviation thereof, Dr., to his or her name, with the intent thereby to imply that he or she is a practitioner of medicine or surgery; but nothing herein contained shall be construed to apply to gratuitous services, nor to any resident or assistant resident physicians or students at hospitals in the discharge of their hospital or dispensary duties, or in the office of physicians, or to any physician or surgeon from another state, territory or district in which he resides when in actual consultation with a legal practitioner of this state; or to commissioned surgeons of the United States Army or Navy or Marine-Hospital Service, or to chiropodists, or to midwives, or to masseurs or other manual manipulators who use no other means; nor shall the provisions of this article apply to physicians or surgeons residing on the borders of a neighboring state, and duly authorized under the laws thereof to practice medicine or surgery therein, whose practice extends into the limits of this state; provided, that such practitioners shall not open an office or appoint places to meet their patients or receive calls within the limits of this state without complying with the provisions of this Act; provided, that the same privileges be accorded to licensed physicians of this state; provided, further, that nothing in this Act shall annul any of the Acts of the present dental law of the State of Maryland, nor shall apply to any registered graduate of dental surgery now practicing in the said State of Maryland, with the sign titles: Dentist, Surgeon Dentist, Dental Surgeon or Stomatologist.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal, September 13.

1 *The Diagnostic and Therapeutic Value of Ureteral Catheterization; with Report of a Case. L. Gross.
2 *What Means, Other Than Operative, Have We for Preventing and Combating Inflammation of the Mastoid Cells? S. Theobald.
3 *A New Method of Staining the Malarial Parasites, with a Description of the Staining Reactions. C. F. Craig.
4 Ovarian Tumors: Suppuration and Malignant Degeneration. G. E. Crawford.
5 The Identification of Human Blood. J. Lisle.
6 A Case of "Black Water" Fever from the Philippines. F. M. Hartsock.
7 The Logical Status of Vaccination and the Exclusion of Unvaccinated Children from the Public Schools. A. W. Herzog.

American Medicine (Philadelphia), September 13.

8 *Surgical Features of Typhoid Fever. T. McCrae and J. F. Mitchell.
9 *The Extraction of Metallic Fragments from the Vitreous Chamber. S. D. Risley.
10 *Eyestrain and Epilepsy: A Preliminary Report. G. M. Gould.
11 *The Etiology of the Summer Diarrheas of Infants: A Preliminary Report. C. W. Duval and V. H. Bassett.
12 Are the Specific Biologic Properties of Milk Concerned in Nutrition? C. Pope and T. Sollmann.
13 *Loss of Sleep. J. Allen Gilbert.
14 Cases of Carcinoma and Sarcoma Recently Treated by Electric Sterilization. G. Betton Massey.

Philadelphia Medical Journal, September 13.

15 *Tumor of the Pharynx; an Accessory Thyroid Gland. Removal Followed by Myxedema. E. L. Shurly.
16 *Note of a Case in Which the Time Required by an Inappropriate Food to Produce Scorbutic Symptoms Was Accurately Noted. D. J. M. Miller.
17 Spinal Anesthesia, with Report of Cases. O. O. Cooper.
18 *How to Recognize Tubercular Changes in the Apices of the Lungs on Percussion. H. E. Stadlinger.
19 A Case of Puerperal Neuritis. C. J. Aldrich.

Boston Medical and Surgical Journal, September 11.

20 *The Symptoms and Treatment of Hepatic Cirrhosis in the Light of 78 Autopsies. G. G. Sears.
21 *The Clinical Value of the Iodine Reaction in the Leucocytes of the Blood. E. A. Locke.
22 Some of the Orthopedic Conditions of the Newborn Demanding Early Surgical Treatment. C. F. Painter.
23 Cirrhosis of the Liver in Childhood. J. L. Morse.

Medical News (N. Y.), September 13.

24 Empyema in Infants and Children; Its Frequency, Etiology, Symptomatology and Prognosis. H. Koplik.
25 *Surgical Treatment of Empyema—A Report Based on 75 Cases, Observed Chiefly in St. Mary's Hospital for Children. C. N. Dowd.
26 *Pathology of Empyema. D. Bovaird, Jr.
27 *Bronchiectatic Abscess of the Lung; with the Report of a Case Treated Surgically with success. C. R. L. Putnam.
28 A Case of Hepatic Abscess. E. W. Demaree.
29 The Use of Simple Microscopical Methods by the General Practitioner. R. L. Pitfield.

Medical Record (N. Y.), September 13.

30 *The Surgical Treatment of Chronic Bright's Disease. J. A. Schmitt.
31 What Shall We Do with Our Consumptive Poor, Being a Discussion of Dr. Knopf's Paper. A. Meyer.
32 *The Primary Treatment of Railway Injuries. J. N. Baker.
33 *A Further Contribution to Our Knowledge of Electric Ozonation as a Remedial Agent, Especially in the Treatment of Tuberculosis. G. L. Curtis.
34 Two Unusual Complications Following Cataract Extraction: (1) Death After Cataract Extraction, from Diabetes (2) Delirium Tremens Following Extraction of Cataract. T. R. Pooley.
35 Sanitary Protection for Rural Districts. H. B. Bashore.
36 Hydrotherapeutics in Gastrointestinal Diseases. G. Mannheimer.

Northwestern Lancet (Minneapolis), September 1.

37 Report of Some Rather Infrequent Cases Occurring in an Obstetric Practice. F. Leavitt.
38 A Case of Pelosis Rheumatica, or Schoenlein's Disease. G. D. Head.
39 Chronic Inflammation of the Pharyngeal Tonsil Without Interference with Nasal Breathing. Wm. B. Murray.
40 Physical Education. J. W. Robertson.

Albany Medical Annals, September.

41 *Persistent Hiccough. William McDonald.
42 A Case of Angio-neurotic Edema. James F. Rooney.
43 Traumatic Appendicitis. Alvah H. Traver.
44 The Influence of the Discovery of the Relation of Bacteria to Disease on the Practice of Medicine Exclusive of Surgery. (Continued.) H. Judson Lipes.

St. Louis Medical Review, September 13.

45 The Active Principle of Quackery. F. G. Nifong.
46 Report of a Case of Recurrent Diphtheria. G. C. Crandall.

Cincinnati Lancet-Clinic, September 13.

47 Appendicitis. C. L. Bonifield.
48 Ups and Downs of a Physician's Life. G. J. Monroe.
49 The Dignity of the Medical Profession. C. P. King.

Illinois Medical Journal (Springfield), September.

50 *Voluntary Nystagmus. J. Whitefield Smith.
51 The Psychoses in Bright's Disease. C. Barlow.
52 *Certain Points Regarding the Clinical Use of the Various Heart Stimulants. Arthur R. Edwards.
53 *Lymphadenitis and Abscesses of the Liver as Complications of Appendicitis. M. L. Harris.
54 Appendicitis—When Shall We Operate? H. C. Mitchell.
55 Traumatic Injuries to Liver: Report of a Case. J. L. Wiggins.
56 Life Insurance Examinations. H. B. Buck.

Kansas City Medical Index-Lancet, September.

57 *The Surgery of the Vagina. Beverly Campbell.
58 Report of a Case of Urethral Traumatism Involving the Loss of More Than One-half Inch of the Canal and Its Successful Restoration in Continuity. Jacob Block.
59 Five Cases of Exophthalmic Goiter. E. E. Morrison.
60 Enteric Fever. E. L. Cathcart.
61 Surgery of the Thyroid Gland. B. Merrill Ricketts.

Archives of Otology (New Rochelle, N. Y.), August.

62 A Study of Papuan Hearing. Charles S. Myers.
63 *On the Value of Electrolysis in the Eustachian Tube. Norval H. Pierce.
64 Acute Empyema of Frontal Sinus; Operation; Death. Dr. Von Wild.
65 Statistical Report on the Result of the Examination of a Second Series of Deaf-Mutes. Prof. F. Bezold.
66 *On Diseases of the Ear in Hysterical Subjects. Dr. Voss.

67 *The Involvement of the Gasserian Ganglion in Middle-Ear Suppuration. Robert Hilgermann.

Maryland Medical Journal (Baltimore), September.

68 *Inflammation of the Diaphragm Complicating Pneumonia. C. W. G. Rohrer.
69 The Ideal Result to Be Kept in View in the Operative Treatment of Convergent Strabismus in Children. Samuel Theobald.
70 A Fatal Case of Staphylococcus Pyogenes Aureus Infection of the Throat Resembling Diphtheria. John Girdwood.

The Medical Fortnightly (St. Louis), August 25.

71 Remarks on Splanchnoptosis (Illustrated). B. Robinson.
72 Methods of Diagnosis: Surgical. C. E. Black.
73 Scleroderma. F. S. Pearce.

Medical Examiner and Practitioner (N. Y.), August.

74 The Relation of the Examiner to the Agent. David J. Doherty.
75 The Relation of the Examiner to the Home Office. Denslow Lewis.
76 The Relation of the Agent to the Medical Examiner. J. W. Jackson.
77 Proper Claims of the Agent on the Medical Examiner. L. Brackett Bishop.
78 Can the Invalidism and Mortality Following Uterine Affections Be Diminished? With Special Reference to Lacerations and Injuries of the Uterovaginal Canal and Uterine Cancer. W. H. Irvine.
79 *The Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. George C. Johnston.
80 *Albumin and Sugar. James H. Stowell.

Pennsylvania Medical Journal (Pittsburg), August.

81 President's Address. Association of the Lehigh Valley Surgeons. O. E. McCarty.
82 The Pathology of Burns and Their Sequelæ. Edgar Moore Green.
83 *Burns—Their History and Treatment. J. C. Biddle.
84 A Retrospective View of Seven Years' Experience in the Climatic Treatment of Tuberculosis. Mark A. Rodgers.
85 Emergency Operation in a Case of Ruptured Tubal Pregnancy. R. G. Miles.
86 Immunity. Clement R. Jones.
87 Cerebral Disease. James W. Kaiser.
88 Two-Fold Use of Haab's Electro-Magnet in Eye Surgery. N. J. Weill.

Bulletin of the Johns Hopkins Hospital (Baltimore), August-September.

89 Transactions of the Harford Medical Society, 1787-8. Eugene F. Cordell.
90 The Doctors Gustavus Brown of Lower Maryland. Eugene F. Cordell.
91 A Contribution to the History of Medicine in the Province of Maryland, 1636-1671. Walter R. Steiner.
92 *Some Distinguished American Students of Tuberculosis. Henry B. Jacobs.
93 *America's Contributions to Surgery. Martin B. Tinker.
94 *The Toxicity of Methyl Alcohol. Reid Hunt.

New York State Journal of Medicine (N. Y.), September.

95 The Physician in Literature. Elias Lester.
96 Modification in the Methods of Operative Surgery, Resulting from Laboratory Research. Joseph D. Bryant.
97 Pelvic Inflammation in the Female; Its Diagnosis and Management by the General Practitioner. Abraham Brothers.
98 *The Broad Therapeutic Application of Ergot. Alfred Livingston.
99 The Correction of Deformities Following Osteitis of the Knee. Wisner R. Townsend.
100 Appendicitis. John B. Deaver.

The Medical Times and Register (Philadelphia), August.

101 Mosquito Work in Havana. W. C. Gorgas.
102 The Summer Diarrhea of Children. W. L. Harris.
103 Infant Feeding. M. Ostheimer.
104 The Relation of the Nose to the Reproductive Organs. C. N. Cox.
105 Typhoid Fever. J. R. Stivers.

American Journal of Obstetrics (N. Y.), August.

106 *The Trophoblast and Chorionic Epithelium, and Their Relation to Chorio-Epithelioma. Samuel W. Bandler.
107 *A Change Needed in Our Practice in Dealing with Cancer of the Uterus and Cancer of the Breast. A. Lapthorn Smith.
108 An Ovarian Sarcoma Developing from the Theca Externa of the Graafian Follicle. W. W. Russell and B. R. Schenck.
109 Report of a Case of Epithelioma of the Clitoris, with Operation. Charles P. Noble.
110 *Propriety of Simultaneous Attendance upon Scarlet Fever and Obstetrical Cases. A. Reich.
111 Cesarean Section Necessitated by Ventrosuspension. Adelaide Brown.
112 Technique of Denuding Plastic Perineum Operations. N. B. Aldrich.
113 The Early Diagnosis and Treatment of Hip Disease. A. R. Shands.
114 *Essential or Toxemic Dropsy in Children. George N. Acker.

Fort Wayne Medical Journal-Magazine, August.

115 Some Observations on Intranasal Surgery. A. E. Bulson, Jr.
116 Tuberculosis. B. Van Sweringen.

Mobile Medical and Surgical Journal, August.

117 Mastoiditis. J. A. Goggans.
118 Inflammatory Conditions of the Vermiform Appendix. W. T. Henderson.
119 A Case of Coexisting Intra- and Extra-Uterine Pregnancy. H. T. Inge.
120 Atresia of the Vagina. W. H. Blake.
121 Report of a Case of Gastrostomy. H. W. Blair.
122 Report of a Case of Typhoid Fever, Etc. D. J. Spottswood.
123 Toxemia of Pregnancy. J. B. Killebrew.
124 Surgical Fevers. W. R. Jackson.

Louisville Monthly Journal of Medicine and Surgery, September.

125 A Rare Case of Appendicitis. W. J. Leach.
126 Medico-Life Insurance. W. E. Grant.
127 The Treatment of Typhoid Fever; Report of a Case. J. W. Fletcher.
128 The Serum Therapy Fallacy. W. E. Shepherd.
129 Organic and Functional Heart Lesions. H. G. Sandlin.

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1. **Ureteral Catheterization.**—The advantages of this procedure are described by Gross, who sums up its diagnostic value as shown in the following cases: in determining "1. Whether the bladder or the kidney is the seat of the affection. 2. The presence or absence of a kidney. 3. Which kidney is involved. 4. The site of the lesion. 5. The functional capacity of each kidney. 6. The presence of a calculus in the ureter or pelvis of the kidney and its exact location. 7. The presence of strictures in the ureter and their exact location. 8. The diagnosis and site of ureteral fistulæ. 9. The presence of a pyoureter. 10. A differential diagnosis between diseases of the kidney and the surrounding organs. 11. At times a tuberculosis of the kidney. 12. The diagnosis of pyelitis, pyelonephritis, pyonephrosis, movable kidney, neoplasms of the kidney, renal lithiasis. 13. Abnormal congenital conditions of the ureter." Its therapeutic value is shown in its employment: "1. To cure pyelitis and certain cases of pyonephrosis and hydronephrosis. 2. To drain pocket formations. 3. To dilate strictures of the ureters. 4. To dislodge small calculi of the ureter. 5. To drain the kidney after nephrotomy. 6. To prevent injury to, and stitching together of, the ureter in certain operations. 7. To prevent and cure renal fistulæ. 8. As a guide to certain operations on the pelvis of the kidney."

2. **Mastoid Disease.**—Theobald believes that in case of mastoid disease, in addition to building up the system by tonics and eliminating habitual constipation if it is present, we should find by trial the antiseptic solution that is most effective in the suppuration of mastoid disease, and instead of compelling the patient to depend upon the surgeon for its application, to teach him to use it himself by syringing or douching as often as is necessary. The antiseptic solution which he has found most useful is the bichlorid of mercury in solutions of from 1 to 8000 to 1 to 4000. Except where the discharge is very profuse a daily syringing will do, and it is generally possible after a short time to increase the interval. The next to this is boric acid. As a tonic he places great confidence in a combination of the phosphates of iron, quinin, and strychnin, and in aloin for constipation. He believes also in energetic purgation with calomel as an antiphlogistic measure, and he also has faith in anodyne solutions as having a favorable influence upon the inflammatory process. Another remedy he recommends is pyrophosphate of sodium in full doses, 20 grains every two hours for an adult and less for a child. It unquestionably exerts a controlling influence upon suppurative processes. He also believes in the use of mercury for its specific action on the system.

3. **Malarial Parasites.**—The new method here described was accidentally discovered by Craig, who unwittingly used a solution of methyl violet instead of methylene blue. He describes his method as follows. Two solutions are employed. "Solution A: A saturated aqueous solution of methyl violet B. This solution should be prepared with distilled water and should be at least three weeks old. Solution B: A 5 per cent. solution of eosin. The method pursued in staining specimens is as follows: Very thin blood smears are made upon perfectly clean cover glasses. These smears are hardened in absolute alcohol for from five to ten minutes. They are next carefully dried and stained with solution A for ten seconds; then thoroughly washed in water and stained with solution B for from three to five seconds. The specimens are finally carefully dried and mounted in Canada balsam. As will be seen, the time for staining is very short, which is an improvement over the valuable methods which have heretofore been proposed. *Precautions to be Observed.*—1. Both staining fluids should

be prepared with the colors made by Grubler & Co., Leipsic. 2. The methyl violet solution should be at least three weeks old. 3. The smears should be thin and the blood evenly distributed over the cover glass. In thick smears the coloring is very diffuse and the distinction between the corpuscles and parasites nearly obliterated. 4. The methyl violet solution should not be allowed to act for longer than twenty seconds at the most, otherwise the staining is too intense. 5. The eosin solution should not be allowed to act for more than five seconds, for the same reason. 6. The specimens should be thoroughly dried before mounting, and thoroughly washed and dried between the application of the stains. If these precautions are observed carefully, good specimens are very easily obtained, and the staining reactions are very distinct. In my experience this method gives more uniformly good results than any other method with which I am acquainted." The staining reactions are very distinctive, and it is particularly valuable, he claims, in differentiating the crescents and the flagellated organisms. It can not replace the examination of fresh blood, but it is a most valuable test, he thinks, as it differentiates so distinctly the protoplasm, nucleus, and chromatin. It is easy, rapid and very uniform in its results.

8. **Typhoid Perforation.**—McCrae and Mitchell conclude their paper in this issue and summarize their experience in the following: "1. There have been treated 275 cases. 2. Of these a certain number had unimportant complications, as boils or abscesses, the cultures from which in every instance yielded pyogenic cocci. 3. Periostitis and perichondritis have been seen occasionally, always subsiding without surgical interference. 4. Glandular affections, especially mastitis, occurred, but were not serious. 5. Abscess of the liver occurred once with recovery, the cultures being practically negative. 6. There have been symptoms of cholecystitis in 5 cases, of which 3 subsided without operation, one patient was operated on and recovered, while in one the gall-bladder ruptured and general peritonitis resulting in death followed. 7. Appendicitis was suspected on admission in 3 cases and developed once during the course of typhoid fever. 8. Perforation of the intestine occurred in 8 patients. Of these 7 were operated on with 2 recoveries, a third dying of toxemia after a week. All of these 7 were recognized within nine hours, except 2, in which hemorrhage from the bowel accompanied the perforation. In one case operation was not advised because the patient was evidently *in extremis*. 9. Exploratory laparotomy was done in 2 cases in which no perforation was found. In one the symptoms proved to be due to intestinal hemorrhage; in the other to a low grade of peritonitis. The first patient died; the second recovered. 10. Eleven patients with suspicious abdominal symptoms were not operated upon. Of these, 2 died and the autopsies showed no perforation. The remaining 9 recovered." They do not claim that every case should be operated on or that every suspicious case requires exploratory laparotomy, but emphasize their opinion that in the early recognition of perforation is found the only hope of diminishing the mortality. Hence, every means should be used, and in certain cases exploration is justifiable.

9. **Foreign Bodies in the Vitreous.**—Risley reports four cases operated on with the Hirschberg magnet. He discusses the utility of the large and small magnets in such cases, especially in connection with the use of the Roentgen rays and says in conclusion: "that in the present state of our experience, in absence of definite knowledge as to the presence or exact location of the metallic fragment, the powerful giant magnet is an invaluable aid; but that, given the knowledge afforded by the skiagraph in exactly localizing the foreign body, the less powerful instruments are efficient, less costly, and more convenient in the daily routine of office and hospital practice. It remains to be shown by extended statistics which procedure

10. **Eyestrain and Epilepsy.**—Gould and A. G. Bennett report results from an investigation of 78 patients in the Craig Colony for Epileptics. Seven of these were excluded on account of organic disease of the eye or psychic or ocular amblyopia, and three, or 4 per cent., because of approximate normality will best conserve the integrity of the eye."

of vision. The remainder, 68, revealed 13 cases, about 20 per cent., of myopic or compound myopic astigmatism; 54 cases, about 80 per cent., of hyperopic or compound hyperopic astigmatism; 33 cases, about 50 per cent., of unsymmetric astigmatism; 15 cases, about 22 per cent., with normal acuteness of vision (with correction); 23 cases, about 34 per cent., with moderately subnormal acuteness (with correction); 30 cases, about 44 per cent., with 20/40 vision or less (with correction); 3 cases only had regular, isometropic, compound astigmatism; 1 case only had simple regular astigmatism; 1 case only had simple hyperopia; 0 case had simple myopia; 9 cases were absolutely isometropic, i. e., about 77 per cent. had anisometropia. The muscle-imbalances of high or complicating significance were unexpectedly absent; in only one case did they require a final correction. The notable point was the enormous proportion of injurious astigmatic and anisometropic conditions which they estimate as 20 times more frequent than in normal individuals. They do not claim that these conditions caused the epilepsy, or that their correction will modify that disease. This can only be shown by experience. They do, however, think that the eyestrain may possibly have been an initial factor, and they insist on the need of its correction in the interest of the patient's general health.

11. **Summer Diarrhea.**—This is a preliminary note by Duval and Bassett announcing their discovery of Shiga's bacillus in the summer diarrhea of infants. From their findings and control observations, both by microscopic examination, cultures and serum reactions, they believe that the summer diarrhea of infants and the acute bacillary dysentery of adults are both due to the same organism, the *B. dysenteriæ* of Shiga.

13. **Loss of Sleep.**—Observations on 3 individuals who kept awake continuously for ninety hours, with various psychologic and physiologic tests, which were described partly in a former paper (Vol. 1, Studies in Psychology, University of Iowa) are reported by Gilbert. He himself was one of the subjects and two of his fellow teachers were the others. He calls attention to the following points: "Pulse is lowered by progressive loss of sleep. For the first 24 hours exercise increases the pulse rate, but as loss of sleep increases the same exercise decreases the pulse rate. After sleeping the rate rises again to normal or slightly above and exercise again increases the rate of pulse beat. Temperature is lowered by excessive loss of sleep, the normal being regained after sleep. Weight increases rather constantly with loss of sleep and decreases again after sleep. However, so many elements may be instrumental in producing this result that too much emphasis dare not be put on the statement. Strength as manifested by lifting ability is markedly decreased by loss of sleep and reinstated by subsequent sleep. Reaction-time and reaction with discrimination and choice are affected but little until the expiration of 72 hours of wakefulness, when the time is noticeably increased, sleep again decreasing it. Acuteness of vision is increased while acuteness of hearing is decreased by loss of sleep, each returning partially to normal subsequent to the period of sleep. Power of memorizing is affected but little for 66 hours, after which time it rapidly becomes poor, at times entire control being lost, subsequent sleep, however, restoring the full normal power. Rapidity of addition of figures follows somewhat the same law as power of memorizing, though not to such a marked degree. Perception, as indicated by the rapidity of naming letters, is markedly dulled by loss of sleep, full power being restored subsequent to sleep. The amount of urine excreted per hour during sleep fast was nearly double that during subsequent sleep. Comparatively little was excreted during the 24 hours immediately succeeding sleep, the usual amount being excreted, however, during the second 24 hours after sleep. During the sleep fast the amount increased steadily during the first 72 hours. That of the fourth day, taken from 9 a. m. to 9 p. m., instead of for 24 hours, showed a decrease per hour, but being taken thus on a different basis from that of the first 72 hours deduction on the same basis is impossible. Less and less nitrogen was excreted per hour during the sleep fast and relatively very small amount during sleep with increase in amount

thereafter. The amount of phosphoric acid excreted was increased during sleep fast, relatively very small amount being excreted, however, during sleep, the amount increasing again subsequent to sleep. Thus the relative amount of nitrogen to phosphoric acid decreases as loss of sleep increases."

15. **Accessory Thyroid Tumor.**—Shurly reports a case where the removal of a pharyngeal tumor, which turned out to be an accessory thyroid, was followed by symptoms of myxedema. The special point of interest was that there was no evidence of atrophy of the true thyroid body. It must nevertheless have been abnormal or functionally defective. He has seen another probably similar case.

16. **Scorbutus.**—In the case reported by Miller the time during which the condensed milk was taken before the scorbutic symptoms appeared was eight weeks, or, counting the preliminary week of fretfulness and anorexia, just seven weeks.

18. **Percussion Signs of Tuberculosis.**—Stadlinger describes his method of marking out the limits of the apex resonance on the two sides, noticing asymmetries and allowing for spinal curvature or other conditions that might affect the development on the two sides. The inner lines, other things being equal, should meet posteriorly at about the second dorsal vertebra; if on one side it goes below this, it suggests infiltration and the lower it is, the more extensive. The amount of respiratory mobility, the auscultatory signs and the condition of the basal portions of the lungs are all also to be noted.

20. **Hepatic Cirrhosis.**—The more important conclusions deduced by Sears from the 78 cases here analysed are given by him as follows: "Hepatic cirrhosis is, in a majority of instances, but one expression of the effect of a systemic poisoning. The degenerative changes in other organs are to be regarded as part of this general process, rather than as complications. The splenic tumor and dilated veins are due in part to portal obstruction, but also seem dependent on the underlying toxic cause, since they are occasionally associated with slight hepatic changes. Dilatation of the vessels may have some effect as a compensatory mechanism, but is rarely adequate to prevent ascites. Persistent jaundice and hemorrhage from the digestive tract seldom occur until the connective tissue formation is well advanced. Hemorrhage was found to be almost invariably due, when a full pathological description was given, to some gross lesion, which in most cases was an esophageal varix. Ascites occurred in practically the same proportion of cases in all four classes, and was a late symptom. Its early appearance was, with rare exceptions, associated with some form of peritoneal inflammation. Continuous fever was never found, except in the presence of complications. A brief elevation of temperature occasionally occurred, for which no cause could be discovered. No evidence was found to show that the course of the disease was not always progressive, but a high grade of cirrhosis was sometimes reached without incapacitating the patients. Surgical treatment may be indicated in a very small proportion of cases, but conclusive evidence is still lacking to show that the ascites in the cases successfully operated upon was due to hepatic cirrhosis and not to coincident conditions."

21. **The Iodin Reaction.**—This reaction, which was described by Cabot and Locke in the beginning of the present year (See JOURNAL, Feb. 22, 1902, p. 519), has been further studied by the latter author, who gives here his results with the test in a large number of conditions, and especially in appendicitis, where it affords valuable indications as to the exact condition. If absent, the process is probably an early one, and confined to the appendix; if faint or moderate, we may expect to find a small abscess or marked inflammation; if marked, a peritonitis or very severe inflammatory change in the region of the appendix is present. The reaction in the other conditions is given by him in the following conclusions. Only the intracellular iodophilia is pathologic and is here noted: "1. In septicemia always marked. 2. In abscesses and local sepsis (non-tubercular) present, except in the early stages. The intensity varies within wide limits, according to the amount of toxic absorption. With free drainage of the pus the brown granulation in the leucocytes rapidly diminishes within forty-eight hours, in most cases entirely disappearing. 3. In appendicitis variable, according to the extent and character of the inflammatory process. The reaction is negative during the intervals between attacks, absent or faint in the early stages of an acute attack, fair to marked in those cases which have progressed to the stage of abscess formation or peritonitis. 4. In general peritonitis uniformly striking. 5. In empyema invariably positive, generally of a marked type. 6. In dry and serous pleurisy always wanting. 7. In pneumonia (non-tubercular) present, and usually very marked in character. Following crisis, the iodophilia within a few hours becomes less marked, and if the resolution be frank, disappears in from one to two days. Abscess of the lungs and pulmonary thrombosis in the late stages give a positive reaction. 8. In simple bronchitis negative. 9. In enteritis, with severe symptoms, usually faintly positive. 10. In tonsillitis faint to marked, according to the severity of the constitutional symptoms. 11. In salpingitis positive in the presence of abscess formation or marked inflammation. 12. In gonorrheal arthritis positive, though not striking. 13. In articular rheumatism negative. 14. In gallstones variable, apparently depending upon the presence or absence of toxemia. 15. Anemia: (*a*) In pernicious anemia, in the late stages, a faint reaction; (*b*) in chlorosis negative; (*c*) in secondary anemia, of a very marked character, often positive. 16. In malignant disease positive only in the late stages. 17. In acute intestinal obstruction negative unless the bowel becomes gangrenous. 18. In cardiac disease occasionally a faint reaction in the presence of badly broken compensation. 19. In diabetes mellitus positive only in the cases of coma and complication of gangrene. 20. In about 50 per cent. of the cases of malaria positive, often marked. 21. In nephritis in more than half the cases a faint reaction. 22. In typhoid fever positive in about 50 per cent. of cases, usually only when complications or pulmonary disease, furunculosis, hemorrhage or perforation are present. 23. In tuberculosis, uncomplicated, always negative. 24. In hernia, as in acute intestinal obstruction, negative, unless septic absorption has taken place in consequence of gangrene. 25. In extra-uterine pregnancy, with rupture, negative. As will readily be seen from an examination of this summary, the reaction has both a negative and positive value in diagnosis. Septic conditions of all kinds, including septicemia, abscesses and local sepsis, except in the earliest stages, appendicitis accompanied by abscess formation or peritonitis, general peritonitis, empyema, pneumonia, pyonephrosis, salpingitis with severe inflammation or abscess formation, tonsillitis, gonorrheal arthritis and hernia, or acute intestinal obstruction where the bowel has become gangrenous, have invariably given a positive iodophilia, and by its absence all these cases can be ruled out in diagnosis. In other words, no septic condition of any severity can be present without a positive reaction. Furthermore, the disappearance of the glycogen granules in the leucocytes in from twenty-four to forty-eight hours, following crisis, with frank resolution in pneumonia and the thorough drainage of pus in septic cases, is of considerable importance. Thus in the former a positive reaction after several days, following crisis, would point strongly to delayed resolution, abscess or empyema, while in the latter it is certain evidence that the pus is not thoroughly drained. In these last-mentioned cases I have repeatedly found the iodin reaction of assistance when other signs failed to give conclusive evidence." He emphasizes the necessity of a strong illumination of the field in the examination.

25. **Empyema.**—The surgical treatment of empyema is summarized by Dowd as follows: "1. For simple cases excision of about one and a half inches of the seventh or eighth rib in the posterior axillary line; light ether anesthesia is usually employed; the purulent coagula are removed; short rubber tubing, cut partly across, doubled and held by large safety pins, is used for drainage; abundant gauze dressing is applied and changed when saturated. 2. If the patient's condition contra-indicates general anesthesia an incision into the chest may be made between two ribs under cocain anesthesia. 3. Aspiration is only used to give temporary relief in patients who are in great distress from the pressure of the fluid, or temporarily to relieve the

second side of a double empyema after the first side has been opened. 4. The patients are allowed out of bed as soon as is practicable, and the expansion of the lung is encouraged by forced expiration. 5. Irrigation is only used where there is a foul smelling discharge from necrotic lung tissue. 6. Secondary operations are not done until good opportunity has been given for healing; usually three or four months should have elapsed after the primary operation, and there should have been no noticeable improvement for about a month. 7. In the secondary operation the expansion of the lung should be encouraged by incising, stripping back, and, if necessary, removing portions of the thickened pulmonary pleura. 8. The examination of forty-four of the patients at long periods after operation indicates that recovery is usually complete in the simple cases, and that there is surprisingly little deformity in most of the severe cases."

26. **Pathology of Empyema.**—Bovaird calls particular attention in this article to the following points in the pathology of empyema: "1. Its frequency in children. 2. The frequency of bilateral cases. 3. The impossibility of drawing sharp distinction between serofibrinous pleurisy and empyema. 4. The creamy consistency of the exudate in many cases. 5. The frequency of sacculated effusions. 6. The frequency of pneumonia, especially bronchopneumonia, as a preceding or accompanying lesion. 7. So far as concerns the bacteriology of empyema, the pneumococcus is present in the great majority of cases in children, especially in the thick creamy exudates. The streptococcus or Staphylococcus pyogenes is found in a much smaller percentage of cases, especially in those not associated with pneumonia and characterized by thin purulent exudates. 8. Tuberculosis is present in but a small per centage (6 per cent.) of cases."

27. **Bronchiectatic Pulmonary Abscess.**—The differentiation of bronchiectatic abscess of the lung from tubercular cavities may be impossible and the presence of bacilli does not exclude it, though their absence in a case with slight fever and general bronchitis with a non-progressive condition of the cavity would confirm its bronchiectatic nature. Good general nutrition in a case of long standing is also confirmatory. From lung abscess or gangrene the physical signs ought to distinguish it and in actinomycosis there would be no purulent discharge unless it opened into a bronchus and a test for the parasite would also make it clear if it did. The same is true of the rare condition of hydatid. Putnam discusses the physical signs, the especially characteristic course, moist râles, etc., and thinks the *x*-rays with more perfect technique ought to be of great value. He describes the surgical treatment, including: "1. Drainage, through the bronchus, brought about by compressing the lung, allowing aseptic air or nitrogen gas to enter the thoracic cavity through a hypodermic needle during inspiration (Murphy). This operation is repeated on alternate days. Manual compression of the lung through the thoracic wound has also been suggested. 2. Drainage through the thoracic wall, external drainage," and reports a case treated by operation. In conclusion he says: "Whereas, the cases reported by Borchert, varying in age from twenty-one to fifty-two years, resulted in four deaths (one three months after operating), and one cure (requiring two years for healing of wound), making the outlook for adults seem bad; the great improvement in the case shown and reported to-night, even though not necessarily permanent, certainly justifies operative interference in cases of bronchiectasis which have progressed to abscess formation. Analysis of Borchert's cases shows that the long standing of the disease and the ravages revealed at autopsy were the causes of the fatal result, and they only emphasize the importance of early diagnosis and operation."

30. **Surgery in Bright's Disease.**—Schmitt reviews the history of the surgical treatment of Bright's disease to a certain extent. From a study of the published records he formulates the following conclusions: "1. In acute infectious diseases anuria with uremic symptoms threatening the life of the patient, can be successfully combated by capsular incision or renal cleavage, which relieves congestive swelling and excess of intrarenal pressure. Operation on one side is sufficient to bring about an abundant urinary secretion, followed by a subsidence of the alarming general features. Whether the other kidney gains time to recuperate and reassume its function, or whether reflex action plays a predominant rôle, are debatable points. At all events nature seems to get along with a small portion of functionating kidney tissue. 2. Anuria with uremic symptoms, occurring in the course of chronic Bright's disease, has afforded an occasion for surgical procedure. To recognize such an indication on reasons which are analogous to those above mentioned is, of course, a matter of individual judgment. Temporary relief, in some instances, has been gained—a permanent cure, however, has never been effected. 3. When the kidney has been operated upon directly for the cure of chronic Bright's disease the outcome has been a failure. The apparent benefit manifested in the disappearance of dropsy, dyspnea, etc., occurs just as regularly in the ordinary course of the treatment by medication and capillary drainage or puncture. 4. In exceptional cases colicky pains and hematuria are caused by chronic Bright's disease. Capsular incision or cleavage of that kidney to which the disturbances were traceable, has been attended by excellent results; there can be no doubt that, when medical expedients have failed, surgical interference has succeeded in checking the hemorrhages and alleviating the pains, but it does not inhibit the progress of chronic Bright's disease. 5. Nephropexy may cure the ailments incident to movable kidney; it may remove albuminuria, if this be the result of local irritation, consequent upon the displacement; if, however, the movable kidney is affected by chronic Bright's disease, this affliction will remain uninfluenced by operation."

32. **Railway Injuries.**—Baker emphasizes the importance of understanding and appreciating the nervous phenomena of shock, the value of normal saline infusion, intravenously, for its relief in its graver forms and the importance of prompt surgical interference on reaction. He also insists on the importance of plantar or palmar flap where the foot or hand is involved requiring partial amputation, and the necessity of avoiding sacrifice of joints and tissue and of leaving smooth, painless, non-contracted and non-cicatrized stumps.

33. **Electric Ozonation in Tuberculosis.**—This method, which was previously described by Curtis in the *New York Medical Journal*, January 18 and February 1, is again taken up by him and its theory and alleged advantages descanted on. The theory of the treatment is that by the absorption of ozone in the electrical cabinet the blood and tissues are affected, the local conditions relieved, the nutrition re-established and the circulation invigorated. Medicinal agents, exercise and any indicated special treatment are also to be used *pro re nata*. The beneficial effect on the blood is claimed to be very marked, as shown by increase of red globules and hemoglobin percentage. Curtis believes that the examination of the blood is essential in the diagnosis of incipient tuberculosis. The presence of tuberculous granular matter and broken down blood cells is evident, he says, in freshly drawn blood, and long before physical signs reveal the disease.

41. **Hiccough.**—The essential feature of hiccough is sudden involuntary contraction of the diaphragm, and our knowledge in regard to the subject is not as yet sufficiently definite. McDonald does not recognize persistent hiccough as a definite disease, or at least considers that we have few facts in our possession to warrant that conclusion. Predisposition to its existence in any abnormal nervous irritability and in any local disorder which might extend to or become contingent on any portion of the phrenic, its centers, or immediately related afferent nerves, such as the gastric branches of the vagus, may be said to offer special liability and may intensify predisposition. Of the local predisposing causes the commonest examples are pre-existing inflammation of the pleura or peritoneum. Diseases of the generative organs and digestion act reflexly in many cases. It is most frequent in childhood and in old age and more frequent in females than in males. McDonald reviews a number of cases in the literature and reports one where it seemed to be largely due to sexual excess in a nervous person. It was treated by the use of gelsemium, which seemed

to do good, though he does not credit it implicitly, and the use of the static machine. He says the moral of his studies is that we should not treat the name of the disease, nor even the disease, but the patient. Perhaps in all medicine we could scarcely find a disease, condition, or a symptom in which we could trace so easily the faltering zig-zag footprints of a groping empiricism.

50. **Voluntary Nystagmus.**—Smith reports a case and discusses the condition, reporting also experimental researches of his own on the subject. He remarks that movements of the eye may be produced by electric excitation of the motor area of the frontal lobe and the occipital cortex of the visual center region. In the former case the impulse or sensation must travel from the kinesthetic centers of the frontal cortex to the lower centers along contiguous medullary fibers which he describes as the "Z tract" or "ocular radiation" and notes the following in support of this: 1. In the projection system the anatomy seems to show the connection between the cortical centers of the frontal lobe with the ganglionic centers of the thalamus, and of these with the nuclei of the nerves of the ocular muscles, and also with the co-ordinating centers. 2. That the thalamus is an important basal ganglion not only originating fibers, but also a kind of way-station or internode through which fibers pass to and from the cortex. 3. In the "Z tract" or "ocular radiation" fibers stream outward from the side of the thalamus. Their course through the thalamus is shown by the transverse markings of the medullary fibers in the anterior, external and posterior nuclei. 4. The response in activity of the ocular muscles under the influence of electric stimulation in the region of the precentral sulcus. 5. Nystagmatic movements have been produced by passing a probe into the region of the corpora striata and optic thalami. 6. Incoordinated movements of the eyes are never intimately connected with lesions of the upper and more peripheral parts of the brain. 7. Cerebral hemorrhages involving the basal ganglia often produce conjugate deviation of the head and eyes toward the unparalyzed side. 8. Conjugate deviation of the eyes occurring as a symptom of cerebral lesion in the region of the basal ganglia is usually indirect and transitory, showing a temporary disturbance only in the tract of fibers connecting the cortex with the center of the brain.

52. **Heart Stimulants.**—The different heart stimulants are reviewed by Edwards, who notices particularly the effects of ammonia preparations. Alcohol, he thinks, has clinical indications in some cases, though not explained by laboratory findings. Strychnin is mentioned, opium and morphin he thinks are not sufficiently recognized as vaso-cardiac tonics, and lastly he mentions digitalis, which is always a prototype of the chemical cardio-vascular stimulants. It acts by increasing the tonus of the musculature, and affording a remedy by coordinating cardiac activity, slowing a very rapid heart and improving the intrinsic cardiac circulation. In moderate doses it also elevates arterial pressure by increasing the working power of the heart and contracting the arterioles from the centric stimulation and local action. It is contra-indicated 1, in balanced compensation; 2, if rest in bed, active purgation, etc., have not been previously attempted; 3, in case of adequate hypertrophy; 4, wherever danger exists in the direction of vessel rupture as in very marked atheroma, aneurism, etc.; 5, in marked fatty degeneration of the heart, that is, extreme grades of the lesion. Where the vessels are contracted strongly it may be combined with strophanthus or nitroglycerin to relieve the angiospasm. It has accumulative action as a rule, and the dosing should be intermittent and great care used in ambulatory dispensary and office patients. In conclusion he remarks that in some cases digitoxin has seemed to be more effective than digitalis or the other preparations.

53. **Appendicitis.**—Harris calls attention to the occurrence of lymphadenitis and local abscess of the liver in cases of appendicitis and gives statistics from various authorities showing the frequency of infection of the portal vein and liver and the necessity of directing attention to the liver in all cases of appendicitis that present obscure complications, and also of considering the possibility of appendicitis in cases of evident infection of the liver or bile tract as a possible source of the infection.

57. **Surgery of the Vagina.**—Campbell insists on the following points: "1. That prolapse of the uterus is, strictly speaking, hernia of the uterus, due to weakening of the pelvic floor from different causes. 2. In child-bearing women the cause usually is from the traumatism inflicted upon the pelvic floor incident to labor. 3. That the pelvic floor, wherever injured, should be repaired as a preventive measure in the production of hernia of the uterus. 4. That the reparative work upon the pelvic floor must necessarily be the province quite largely of the general practitioner. 5. That the physician who is competent to safely care for women in confinement, should also be competent to repair the pelvic floor."

63. **Electrolysis of the Eustachian Tube.**—Pierce has experimented in the treatment by electrolysis for narrowing of the Eustachian tube and concludes that in otosclerotic disease it is useless, and that in the great majority of catarrhal diseases it has no advantage over other methods of treatment. Only in a few cases where there is probably a soft exudate near the isthmus, may it be regarded as of value.

66. **Ear Disease in Hysteric Subjects.**—Voss summarizes his paper in the following: "1. The objective picture of an acute otitis media may appear as a symptom of hysteria. 2. Pure functional neuroses of the ear should be treated, not by an otologist, but by a neurologist. 3. In these cases an absolute contra-indication exists against too much treatment, especially of the nose and pharynx. 4. The generally well-known craving of hysterical subjects for operations may also center upon the ear (and probably also upon the nose). 5. Opening the mastoid process to relieve the mastalgia of hysterical patients is absolutely contra-indicated. 6. Our present method of after-treatment of radical operations with prolonged tamponing is not at all suitable for children or nervous and hysterical patients. After the fifth day the tampon is entirely superfluous and should be replaced by a simple outer dressing."

67. **Gasserian Ganglion in Middle-Ear Suppuration.**—Hilgermann first reviews the anatomical relations and shows the paths which the suppurative inflammation may follow to reach and involve the Gasserian ganglion. Cases where infection has followed the path are rare. He reports one from Von Troeltsch and mentions one from Ostman. He also reports a case of his own observation in which the autopsy showed the Gasserian ganglion bathed in pus after acute mastoid disease, and others where meningitis was transmitted through the cavernous sinus or the cavity of Meckel, though the paths in all could not be so accurately ascertained.

68. **Pneumonic Inflammation of the Diaphragm.**—The conclusions of Rohrer's article are that: "1. Inflammation of the diaphragm is a common complication of pneumonia. In most of those cases in which it is not found it will be observed that the specimen was obtained from a part of the diaphragm remote from the inflamed lung. Extension of the inflammatory process from the pneumonic lung to the diaphragm takes place in two or three ways—(*a*) by direct extension; (*b*) by the lymphatics; (*c*) by the blood-vascular system. 2. To inflammation of the diaphragm is due in large part the so-called 'pleuritis stitch-pain,' also the pain in the abdomen often complained of, especially by children. When the patient lies on the affected side the pain is diminished, because there is less motion of the chest-wall and diaphragm in that position. The dyspnea of frequency, always present in pneumonia, is due in large part to the patient's efforts to restrict the movements of the diaphragm. 3. The inflammation especially involves the muscular substance of the diaphragm, and may be mild or intense, in keeping with the grade and extent of the pneumonic condition. It is of bacterial origin, the usual micro-organism being the pneumococcus."

79. **Tuberculosis.**—Johnston gives the following as the more important suspicious symptoms, arranged in the order of their prominence: 1. Cough.—A slight, hacking, persistent cough, which can be referred to the larynx or upper trachea. It is worse at night or upon lying down. There is little or no ex-

pectoration. 2. A failing appetite.—There is a repugnance for fatty foods and some degree of indigestion. 3. Loss of weight.—Patient is a few points below his average weight. 4. Sleep sweats.—Upon lying down, day or night, the patient awakens with the neck and upper chest bathed in a warm or cold perspiration. 5. Accelerated pulse.—A pulse of 90 to 100, which is quick, irritable and ill sustained. 6. Elevation of temperature. This is an unobtrusive symptom, but is of the highest importance. When a case of beginning tuberculosis is suspected, a temperature record at 2:30 p. m. on several successive days should be insisted upon. A temperature elevation of 1 F. is a symptom that must be accounted for absolutely by some other condition, or tuberculosis must be suspected and confirmatory symptoms searched for. 7. Fistula in ano.—When syphilis is eliminated, this condition calls for a careful examination of the chest. 8. Pleurisy with effusion.—A history of pleurisy with effusion in a patient who complains of any of the above-mentioned symptoms, is important.

80. **Albumin and Sugar.**—Stowell, while admitting the fact that the presence of albumin or sugar in the urine may amount to very little, as far as the effects on the kidneys are concerned, claims such cases should not be regarded lightly. The effects of albumin in the urine on life expectancy depend primarily on the associated conditions, such as the presence or absence of heart lesions, age and habits. The author agrees with Dr. Osler in the statement that over-eating causes more Bright's disease than does whiskey.

83. **Burns.**—Biddle uses a mixture composed of carbonate of lead, powdered acacia, bicarbonate of soda and linseed oil, made thin enough so as to spread nicely upon canton flannel, and finds it superior to any remedy as yet suggested for burns. He says if properly applied the patient will have few, if any scars. The mixture should be applied on the flannel so as to make an impervious protection to the surface and held in position by a roller bandage, all the devitalized skin being first cut away. The dressing is changed as often as necessary. When granulations get too high, salicylic acid should be dusted over the surface. The lead dressing is continued for ten days or two weeks, and sometimes longer. Skin grafting should be done early in all cases where there has been much destruction of tissue, or in parts near the tendons, or where contraction would produce an unsightly deformity. He attributes death from burns more often to pneumonia than duodenal perforations and exhaustion is also one of the chief causes.

92. **American Contributions to Tuberculosis.**—Jacobs gives brief biographic accounts with the pictures of a number of prominent American physicians who have contributed to our knowledge of tuberculosis, and sums up the American contributions as follows: "1. That Rush's influence directed men to study in every case the natural history of disease rather than to follow blindly some old world dictum; in his treatment of consumption he directed men into the path which with slight deviations is followed still to-day. 2. That Morton first brought back to America Laennec's methods of auscultation for the benefit of his fellow countrymen, inculcating accurate observation and stimulating the study of the morbid anatomy of the disease and spreading the knowledge of it by clear description and accurate illustration. Through his independent investigations he was led to Laennec's and Louis' views, viz., that the tubercle, singly or in groups, is the sole pathologic expression of tuberculosis. 3. That young Jackson discovered a new auscultatory feature in early pulmonary tuberculosis. 4. That William Gerhard disseminated widely the knowledge of auscultation and percussion and Laennec's pathology of consumption by his repeated publications. 5. That Bowditch demonstrated the pernicious influence of unsanitary surroundings, particularly of soil moisture, on the production of consumption, and first illustrated the safe and advantageous use of thoracentesis for pleuritic effusions which so frequently are tuberculous in origin. Moreover, that he was at least one of the first to revive the doctrine of the infectiousness of consumption, and thereupon suggested a mode of treatment which precluded the possibility of its direct transmission. 6. That Austin Flint introduced several auscultatory features of value in determining the pulmonary condition, and by his teachings was beneficial in controverting the retrogressive teachings of Niemeyer. His careful analysis of an unexampled series of cases widened the knowledge of the disease, and his unbounded influence led to the early acceptance, in this country at any rate, of the discoveries of Villemin and Koch. 7. That Flick has demonstrated that the danger lies in the dried sputum collected in infected houses. 8. That Vincent Bowditch and others have proven that in local sanatoria as well as in the mountain resorts the consumptive may recover. 9. That Trudeau has experimentally demonstrated the value of pure air in resisting tuberculosis, and has assisted in demonstrating the almost complete valuelessness of so-called specific drugs. Furthermore, that he has controverted by his experiments much that was false in regard to the value of tuberculin and in other ways greatly added to the knowledge of the treatment of consumption. 10. And finally, that many others of our countrymen whose names unfortunately can not here be mentioned for lack of time, have contributed by their writings and by their experience, to a fuller understanding of this disease."

93. **America's Contributions to Surgery.**—In this article Tinker notices the special American contributions to surgery, which he sums up in the following twenty-three: "The introduction of general anesthesia. Four of the most difficult ligations of arteries (innominate, common carotid, common iliac, subclavian, scapular side of scaleni). Introduction of animal ligatures. Treatment of aneurysm by compression. Nephrectomy. Cholecystotomy. Ovariotomy. Introduction of nearly all methods of intestinal anastomosis now in use. The introduction of the proper treatment of appendicitis. Excision of the parotid. Four important excisions of bones (superior and inferior maxillæ, clavicle, interscapulo-thoracic amputation). Operation for osteomyelitis. Drainage of brain abscess. Manipulation in the reduction of dislocations. Skin grafting. Closure of defects in cleft palate. The invention of the tonsillotome."

94. **Methyl Alcohol.**—Very little has been recently published, as Hunt remarks, on the general physiologic action of methyl alcohol and its difference from the better known grain alcohol. There are two forms of methyl alcohol poisoning, the acute and the chronic. While the chronic or subacute is the one of greatest interest (since it differs markedly from poisoning by grain alcohol), he describes first the symptoms of acute poisoning. The chief difference is that the symptoms are produced more slowly and the duration of the intoxication is more prolonged. The coma does not appear until late, but continues very much longer, two, three or four days in animals, and the same differences are well known in the case of man. The point of greatest interest is the question of the relative toxicity of methyl and ethyl alcohol, that is, the relative quantities of the fatal single dose. Experimentally, there appears to be but little difference between the toxicity of methyl and ethyl alcohol, some ascribing the greater to one and some to the other. Hunt's own observations are limited to determine one or two differences. Ethyl alcohol seems to cause more rapid death, that is, ethyl alcohol is slightly more toxic to dogs and rabbits than methyl alcohol. Which of the two alcohols is most poisonous to man in acute cases is the question to answer and one would hesitate in concluding from experiments that methyl alcohol was less toxic than the other. The organs most powerfully affected by methyl alcohol are the higher nerve structures which are more developed in man. As a matter of fact a number of cases are reported in which men have died from methyl alcohol where an equal quantity of ethyl alcohol would most certainly not have caused death. This has been attributed in part to the impurities in wood alcohol, but there is little evidence of this. Certain organs are much more susceptible to injury from wood alcohol than others, as is shown in the case of the eye, numerous cases of blindness having been reported recently. In chronic poisonings the toxicity of methyl alcohol for animals is decidedly greater than that of ethyl alcohol and the author publishes experiments illustrating this fact. Pohl gives evidence show-

ing that methyl alcohol is transformed into formic acid in the body and it seems proven that, however pure the preparation may be, it is totally unfit for use as a substitute for the grain article in any preparation which is to be taken internally and especially in preparations which ought to be taken for any length of time, in spite of contrary statements made by some recent writers.

98. **Ergot.**—Livingston has employed ergot in various diseases with remarkable success, especially where there is circulatory disturbance. He mentions a case of intense vomiting quickly relieved and a case of opium poisoning where he found it of great value. He has also used it regularly in the treatment of the opium habit. For relieving the pain of appendicitis and making the patient comfortable in asthma he thinks it advisable. He also uses it in cases of headache and has found it of great value in cases of embarrassed respiration in pneumonia as well as in other conditions, such as sunstroke, concussion, meningitis, delirium tremens, neurasthenia, sea sickness and iritis. He thinks it is indicated wherever the unstriped muscular fiber is relaxed.

106. **Trophoblast.**—Bandler's article is an elaborate discussion of the physiology and pathology of the ectodermal growths of the ovum. The article is not capable of being abstracted. In conclusion he remarks in regard to the ovarian secretion having its trophic influence on the uterus and being responsible for the function of menstruation. When fecundation and the development of the ovum take place, the ovum and its enzymes nullify the menstrual stimulation of ovarian secretion. The normal gestation is accompanied by stimulating effects of the retained ovarian secretion and when the latter is sufficient in amount and character to overcome the neutralizing action of the enzymes or ovum, labor occurs, that is to say, the same process is started again as appears in menstruation, which he says is a labor in miniature.

107. **Cancer of the Uterus and Breasts.**—We shall never know, says Smith, how many cases owe their origin to contagion carried by the examining physician's finger. He therefore insists on the isolation of hopeless cases and every precaution being taken to limit the spread of the disease. Our only hope for treatment is to get the case as near the beginning as possible and not lose a day in having the diseased area removed. From his experience he holds that in cases of cancer of the uterus we should whenever we can, without greatly increasing the primary risk, remove the adnexa as well. He insists on the importance of laceration of the cervix as the starting point for cancer growths and the significance of hemorrhage after the menopause. He would also have every lump removed from the breasts of women above 40 years of age instead of waiting to make sure that it is cancer.

110. **Scarlatina and Obstetric Cases.**—Reich holds from his observations and experience that the danger of communicating a disease like scarlatina in obstetric cases is not so great as feared. He has succeeded so far in not causing septic infection in his labor cases, and from the observations of others he believes that if the puerperal woman is infected with scarlet fever, it runs its ordinary course. While scarlet fever and puerperal sepsis may co-exist, they each occur independent of one another.

114. **Dropsy in Children.**—Acker reports four cases of dropsy occurring in children without apparent kidney disease, two of them fatal. They had suffered from gastro-intestinal disease, were in poor physical condition and worn out by the drain on the system. He has never seen this form occurring as a primary disease, but always secondary to gastro-intestinal disturbance. Dropsy first appears in the face and then extends to the extremities and body as in kidney disease. There are no constant lesions found in postmortems, and the kidneys do not seem to be responsible, from the results of autopsies. It has been called toxin dropsy because it is supposed that a toxemia has produced the edema. This, Acker thinks, arises in the intestines and the dropsy is due to its action in the capillaries. If the toxins do not exist there must be some chemical alteration of the blood causing this transudation of serum.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), September 6.

1 *A Discussion on the Modification of Milk in the Feeding of Infants. T. M. Rotch and Ten Others.
2 A Discussion on the Surgery of Those Affections of the Central Nervous System Which Occur more Especially in Children. H. J. Stiles and Six Others.
3 On Defective Co-ordination in Utero, as a Probable Factor in the Causation of Certain Congenital Malformations. J. Thomson.
4 A Note on the Operative Treatment of Flail Paralytic Elbow. R. Jones.
5 The After-Treatment of Erasion of the Knee Joints. J. Collier.
6 A Note on the Surgical Treatment of Spastic Infantile Paralysis. R. Jones.
7 The Treatment of Feeble-Minded Children. A. Eichholz.
8 A Discussion on the Value of Respiratory Exercises in the Naso-Pharyngeal Lesions of Childhood. W. A. Lane and Eight Others.
9 *Buttermilk as an Infant Food. A. Baginsky.
10 Congenital Nystagmus in Father and Child. T. Fisher.
11 *Splenic Anemia of Infancy (Pseudo-Leukemic Anemia). J. S. Fowler.
12 *Splenic Anemia of Infants. C. H. Melland.

The Lancet (London), September 6.

13 An Address Delivered to the Graduates on July 26, 1902, at the University of Edinburgh on the Occasion of the Admission to Degrees in Medicine, and of the Conferring of the Honorary Degree of LL.D. upon Representatives of the Colonies. E. A. Schafer.
14 *On the Results Which Have Been Obtained by Anti-Typhoid Inoculation. A. E. Wright.
15 The Clinical Use of the Ipecacuanha Alkaloids. R. B. Wild.
16 A Plea for Tenotomy of the Tendo Achillis in Complicated Fractures of the Lower Extremity. W. Thelwall Thomas.
17 Some Observed Variations in the Phosphates and Urea of Urine. E. G. Clayton.
18 *Note on the Origin of Urine Albumin. Ludwig Aschoff.
19 *A New Route for Posterior Gastro-jejunostomy, with Notes of Four Cases. J. B. Hall.
20 *Note on the Diagnostic and Prognostic Value of the Leucocyte Variations in Asiatic Cholera. L. Rogers.
21 *Environment as a Cause of Ague. M. D. O'Connell.
22 Results in Havana During the Year 1901 of Disinfection for Yellow Fever, Under the Hypothesis That the Stegomyia Mosquito Is the Only Means of Transmitting the Disease. W. C. Gorgas.

The Journal of Tropical Medicine (London), September 1.

23 Some Clinical Notes on a European Patient in Whose Blood a Trypanosoma Was Observed. R. M. Forde.
24 Some Points in Connection with the Operation for the Extraction of Cataract in India. R. H. Elliott.
25 Marking of the Tongue an Early Symptom of Ankylostomiasis. A. B. Duprey.

Annales de l'Institut Pasteur (Paris), xvi, July and August.

26 Recherches sur la digestion chez les amibes et sur leur diastase intracellulaire. H. Mouton.
27 Recherches sur le mode de résorption des cellules hépatiques injectées dans l'organisme. J. Cantacuzène.
28 Physiologic Arsenic in Organism. G. Bertrand.—Sur la recherche et sur l'existence de l'arsenic dans l'organisme.
29 *Recherches sur le phenomène d'agglutination. C. Nicolle and Thenel.
30 Biologic Study of Paramecium in Regard to Blood Serum and to Fluorescent Substances. Ledoux-Lebard. Action du serum sanguin sur les paramécies. Action de la lumière sur la toxicité de l'eosine et de quelques autres substances pour les paramécies.
31 *Recherches sur le role de l'enveloppe des microbes dans l'agglutination. J. Defalle.
32 Les accidents consécutifs aux vaccinations, leur pathogénie et leur prophylaxie. Leclainche and Vallée.
33 Contribution à l'étude des fixateurs du sérum normal de chien (dog). Malvoz.

Nouvelle Iconographie de la Salpetriere (Paris), xv, 2.

34 Sur les affections de la cauda equina et du segment inférieur de la moelle (spinal cord). F. Raymond.
35 Anatomie des lacunes de désintegration cérebrale. J. Ferrand.
36 Infantilisme degen. compliqué de dysthyroidie puberale. E. Dupré.
37 Absence congén. des muscles grand et petit pectoral. A. Souques.
38 Syndrome de Little. G. Daniel.
39 Le sens des altitudes. P. Bonnier.
40 Topographie radiculaire des atrophies musculaires myelopathiques. R. Cestan.
41 Les urologues dans l'art. P. Richer.

Revue Neurologique (Paris), x, May 15 to June 30.

42 (No. 9.) Syndrome de Benedikt. Tubercule solitaire du pedoncle cérébral. L. d'Astros.
43 Tic et fonction. H. Meige.
44 Psycho-physiologie des mourants. N. Vaschide.
45 Atrophie gén. de la musculature de tous les viscères dans une amyotrophie progressive type Aran-Duchenne. A. Leri.
46 (No. 10.) Sclérose en plaques à symptomes transitoires et recidivants. G. Ballet.
47 2 cas de lesions limitées au splenium du corpus callosum. J. Pelnar.
48 *Du parasite trouvé dans le sang des épileptiques. Bra.

49 Nouvelle méthode de mensurations cérébrales. M. Dide.
50 (No. 11.) De la sensibilité du squelette. M. Egger.

Revue Mensuelle des Maladies de l'Enfance (Paris), xx, May.

51 Subglottic Laryngitis. Deguy.—La laryngite sous-glottique.
52 Troubles des échanges nutritifs dans le myxedème infantile. Haushalter and Guérin.
53 *La cirrhose tuberculeuse chez l'enfant (in children), 2 cas. F. Baudouin.

June.

54 La myotonie infantile et la tetanie. Hochsinger.
55 Tuberculose pulmonaire ulcéreuse chez un enfant de 5 mois. Rabot.

July.

56 De l'action des ganglions lymphatiques sur l'absorption et la resorption des graisses (fats). A. Poulain.
57 Hallucinations diurnes chez les enfants. Vergely.

Virchow's Archiv f. path. Anat. und Physiologie und f. klin. Medicin (Berlin), 169, 1 and 2.

58 (No. 1.) Ueber Plasmosomen und Granula der Nieren-Epithelien. J. Arnold.
59 Ueber die Emigrations-Fähigheit der Lymphocyten. J. Almkvist.
60 Zwei seltene Fälle von Hemicephalia nebst Prosoposchisis, compliciert mit Hernia nasofrontalis. W. P. Jukovski.
61 Beitrag zur Pathologie des primären und secundären Gallengangs-Carcinoma (of biliary passages). F. Miodowski.
62 Test of Function of Heart Valves at Autopsies. Bleichröder.—Die Funktions-Prüfung der Mitralklappe bei der Herz-Section.
63 Preservation and Stain of Urinary Sediments. Kozlowski.—Das Conserviren und Färben von mikr. Präparaten der Harnsedimente.
64 (No. 2.) Beitrag zur Casuistik der Pneumomykosen aspergillina. K. Hochheim.
65 Ueber die Herkunft (Origin) von der Cysten der weiblichen Adnexa, ihrer Anhangsgebilde und der Adenomyome des lateralen Tuben-Abschnittes. G. Schickele. (Commenced in No. 1.)
66 Ueber die Pathologie und Histogenese des sogen. "Sarcome angioplastique." K. Wiassow.
67 Elastic Tissue of Uterus During Pregnancy. N. Iwanoff.—Ueber das elastische Gewebe des Uterus während der Gravidität.
68 Destruction and Neoformation of Elastic Tissue in Case of Gastric Carcinoma. T. Inouye.—Ueber Zerstörung und Neubildung des elastischen Gewebes bei Magen-Carcinom.
69 Heteropia of Gray Brain Substance. A. Tedeschi (Buenos Ayres).—Heteropie grauer Hirnsubstanz bei einer epileptischen Idiotin.
70 Physiologic Basis for Study of Stigmata of Degeneration. G. Wolff.—Die phys. Grundlage der Lehre von den Degenerationszeichen.
71 Chemical Differentiation of Suprarenal Tumors of Kidney. A. C. Croftan.—Ueber eine chemische Methode Hypernephrome (Nebennieren-Tumoren) der Niere von anderen Nieren-Geschwülsten zu unterscheiden .

Neurologisches Centralblatt (Leipsic), 4 to 13.

72 (No. 4.) *Fatigue of the Tendon Reflexes. W. von Bechterew.—Ermüdung der Sehnenreflexe.
73 (No. 6.) Myelitis from Intoxication with Carbonic Oxid; Recovery. A. P. Panski.—Fall von acuter disseminirter Myelitis oder Encephalomyelitis nach Kohlenoxidvergiftung mit Uebergang in Heilung.
74 (No. 10.) Ueber acute cerebellare Ataxie. W. von Bechterew.
75 (No. 12.) Fecal Vomiting in Epilepsy. H. Götze.—Kothbrechen während des Status epilepticus.

Monatshefte f. Praktische Dermatologie (Hamburg), xxxv, 2 to 4.

76 (No. 2.) Zur Pathologie des elastischen Gewebes (Tissue). E. Delbanco.
77 Eine Modification der Pappenheim'schen Färbung (Stain) auf Granoplasma. P. G. Unna.
78 *Toothpick method. Richter.—Zur Spickmethode.
79 (No. 3.) *Stypticin als lokales antiphlogisticum. R. Kaufmann.
80 Medicated Powders. G. J. Müller.—Imprägnierte medikamentöse Puder.
81 (No. 4.) *Zur differential Diagnose der Syphilis und syphilisähnlicher Arznei-Exantheme (Drug Eruptions Resembling Syphilis). C. Berliner.
82 Atrophy of Nails with Total Alopecia. L. Leven.—Alopecia areata totalis (maligna), mit Nagelatrophie.
83 Impotence from Premature Total Involution of Testicles. Ibid.—Genuine Hodenatrophie, Azoospermie und Impotentia coundi.

Muenchener Med. Wochenschrift, August 19.

84 *Permanent Results of Sanatorium Treatment. F. Reiche.—Die Dauererfolge der Heilstättenbehandlung Lungenschwindsüchtiger.
85 *Diagnosis of Congenital Tendency to Tuberculosis. G. Sticker.—Zur Diagnose der angeb. Schwindsuchtsanlage.
86 Choice of Candidates for Sanatorium Treatment. R. Kobert. Ueber die Schwierigkeiten bei der Auswahl der Kranken für die Lungenheilstätten.
87 Sanatorium Treatment. E. Meissen.—Zur Heilstätten-Behandlung der Tuberculose.
88 *Hetol (Cinnamic Acid) in General Practice. Katzenstein.—Erfahrungen über Hetolbehandlung in der allg. ärztlichen Praxis.
89 Subcutane Injektionen von Arsenik bei der Therapie der Phthise. H. Cybulski.

August 26.

90 Precipitins and Albumin Bodies in Serum. M. Ascoli.—Zur Kenntniss der Präzipitinwirkung und der Eiweisskörper des Blutserums.
91 Albumin Bodies in Exudates and Urine Precipitated by Acetic Acid. R. Stachelin.—Ueber den durch Essigsäure fällbaren Eiweisskörper der Exsudate und des Urins.
92 *Zur Früh-Diagnose der angeborenen Subluxatio und Luxatio coxae. P. Bade.
93 The Foot of the Negro. M. Herz.—Der Bau des Negerfusses.
94 Vorschlag zum bequemen Aufblasen von Luftkissen (Inflation of Air Cushions). Landgraf.
95 *Relations of Exercise, Body Warmth and Albumosuria to Each Other and to the Fever in Phthisis. G. Schröder.—Ueber die Beziehungen von Körperbewegungen, Körperwarme und Albumosurie zu einander und zum Fieber im Verlaufe der Phthise. (Commenced in No. 33.)
96 *Zur Frage der Genese der Lungen-Tuberkulose. G. Schmorl. (Commenced in No. 33.)
97 Ueber den Einfluss (Influence) von chronischer Lungen-Tuberkulose auf Psyche und Nerven. H. Engel. (Commenced in No. 33.)

Therapeutische Monatshefte (Berlin), August.

98 Ueber Ipecacuanha. R. Kobert.
99 Ueber den Werth der physikalischen Therapie. E. Lindemann.
100 Apparatus for Inhalation of Anti-bacterial Gases in Local Treatment of Tuberculosis. V. Rudolph.—Die locale Behandlung der Lungentuberculose.
101 *Expulsion of Tenia. E. Sobotta.—Vergleich über die Wirksamkeit verschiedener Bandwurmmittel nebst Versuchen das Ricinusöl bei der Bandwurmcur theilweise durch andere Abführmittel zu ersetzen.
102 Zur physikalisch-chemischen Untersuchung der Mineralwässer. H. Koeppe.
103 Zur Controle der einzelnen Tabletten und Pulver auf ihren Gehalt an stark-wirkenden Arzneimitteln (for testing Tablets). H. Dreser.
104 Ueber Perdynamin. O. Liebreich.
105 *Bottles That Separate into Halves. F. Bock (Berlin).—Zerlegbare Flaschen.

Die Therapie der Gegenwart (Berlin), August.

106 Functional Affections. L. Krehl.—Ueber "functionelle" Erkrankungen.
107 Bemerkungen zur Organotherapie im Anschluss an Fälle von Acromegalie, Myxedema infantile und Morbus Addisonii. L. Huismans.
108 Experiences with Suprarenal Substance. A. Kuhn.—Einige Erfahrungen über den therapeutischen Werth der Nebennierensubstanz.
109 Operations for Hernia. F. König.—Ueber Bruchoperationen.
110 *Treatment of Bubo. A Cedercreutz.—Beiträge zur Kenntniss des Bubo inguinalis und der Werth einiger Bubobehandlungsmethoden.
111 Recent Research on Effective Substance of Suprarenals. F. Umber.—Critical Review.
112 *Die Behandlung der chron. Gonorrhoe. J. Cohn.
113 For External Application of Menthol. L. Laquer.—Zur äusseren Anwendung des Menthol.
114 *Suprarenal Snuff for Coryza. B. Goldschmidt.—Renoform, ein Schnupfenmittel.
115 *Collargol and Ichthyol Salve. Franke.—Collargol- und Ichthyol-Salbe.
116 *Subcutaneous Injection of Air in Treatment of Neuralgia. Hester.—Therap. Verwendung Subcut. Luftinjektionen.

Zeitschrift f. diet. und physik. Therapie (Leipsic), vi, April to July.

117 (Nos. 1 and 2.) Feeding the Sick at the Berlin Charité Hospital. H. Schaper.—Die Krankenkost und die Küche der Charite.
118 Klinik und phys. Chemie. P. F. Richter.
119 Influence of Fats on Elimination of Acetone and Acids in Diabetes. K. Grube.—Ueber den Einfluss des Fettes auf dem Aceton und Säureausscheidung beim Diabetiker.
120 Extension in Nervous Affections. P. Kouindzy (Paris).—Die Extensionsmethode und ihre Anwendung bei der Behandlung der Nervenkranken.
121 *Importance of Phosphorus in Infant Feeding. W. Cronheim.—Versuche in den Stoff- und Kraftwechsel des Säuglings mit bes. Berücksichtigung des organisch gebundenen Phosphors.
122 (No. 3.) Importance of Intestinal Bacteria for Nutrition. M. Schottelius.—Ueber die Bedeutung der Darmbakterien für die Ernährung.
123 *Physiologisches über Muskelmassage. H. Ruge.
124 New Design for Hot Air Apparatus. M. Roth.—Eine neue Heissluftapparat-Konstruction.
125 *Present State of Phototherapy. J. Marcuse.—Der gegenwärtige Stand der Lichttherapie.
126 (No. 4.) Treatment of Chronic Nasal and Pharyngeal Catarrh. W. Freudenthal.—Ueber einige prakt. Gesichtspunkte in der Behandlung des chron. Nasen- und Rachencatarrhs.
127 Serum Treatment of Articular Rheumatism. Menzer.—Serumbehandlung bei acutem und chron. Gelenkrheumatismus.
128 Ueber Roborat. F. Rosenfeld.
129 Influence of Local Hydrotherapeutic Measures on Composition of Blood. A. Laqueur.—Ueber die Beeinflussung der Blutzusammensetzung durch lokale hydrotherap. Prozeduren.
130 Meat Extracts and Preparations of Yeast. K. Beerwald.—Fleischextrakt und Hefepräparate.
131 Influence of Neuenahr Water on Metabolism. B. Wendriner.—Ueber den Einfluss des Neunahrer Sprudels auf den Stoffwechsel.

Lo Sperimentale (Florence), lvi, 4.

132 Il tipo normale e le variazioni dell' arteria carotis externa. F. Livini.
133 *Sul potere antitossici della glandula tiroide. V. Remedi.
134 Ricerche batteriologico sul burro del mercato (market butter). G. Foa.
135 Ricerche su di un bacillo della setticemia emorragica dei bovini. G. Galeotti.

1. **Milk Modification for Infant Feeding.**—Rotch's article is too detailed and elaborate for abstract here. It gives his well-known opinions as regards milk modification and the data as determined by the best methods approved in this country. In the discussion following there were some slight differences of opinion expressed. Comby (Paris) and Baginsky suggested that the milk modification might have caused anemia and infantile scurvy, and the latter thought that the feeding of children was largely empirical. Rotch replied to these criticisms, stating that it has not been observed to produce such symptoms in this country, and that we had found it necessary to use our best efforts to obtain a scientifically modified milk where the whole milk was not suitable.

9. **Buttermilk as an Infant Food.**—Baginsky has tried buttermilk in the Emperor and Empress Frederick Hospital in Berlin with very favorable results. It is made from pure cream soured with bacteria and treated by adding to one liter 15 to 25 grams of wheat flour and 35 to 50 grams of cane sugar. With constant stirring it is allowed to boil for at least two minutes and then poured into sterilized bottles stopped with cotton, which are put away in the icebox for keeping. At the time of feeding they are placed in water at body temperature. While this is *a priori* far from being the ideal infant food because of its acidity and lack of fat, the results of its use seem to be excellent. Its great value is shown in acute cases of dyspepsia up to the severe grades of enteritis and diarrhea. Naturally, one would not give it, nor any other food, at the height of an attack, when the temperature is high, vomiting severe and prostration great, but it is surprising how well it is borne. He deduces the following conclusions from his experiences: "1. Buttermilk as prepared and recommended by the Dutch physicians is a good food for acutely and chronically sick infants. 2. Prepared buttermilk is well borne soon after attacks of acute dyspepsia and summer diarrhea. 3. In chronic diarrhea and chronic enteritis cases it may be looked upon as a life-saving preparation. 4. It is to be hoped that more observations be made on its use as an actual food for healthy infants. 5. In the cases which I have observed for a long time, I have never seen disturbances of nutrition such as rachitis or scorbutus develop."

11. **Splenic Anemia of Infancy.**—The conclusions deduced from the study of this disease by Fowler are given by him as follows: "1. Enlarged spleen, often associated with anemia, is not uncommon among young children. In bad cases the blood is much altered, while in slighter ones there may be little change. 2. The change in the blood differs from that in any other disease, and is characterized by (*a*) lymphocytosis, due to the occurrence of numerous transitional and probably immature mononuclear cells, and (*b*) the presence of erythroblasts, often in numbers out of all proportion to the diminution of the red corpuscles. 3. The name pseudo-leukemic anemia has been given to the more severe cases, but to draw any hard and fast line between these and slighter ones, or, indeed, to introduce further subdivisions based on any particular blood change, is entirely arbitrary. 4. Since the splenic enlargement is more constant than any single change in the blood, and since both arise independently of any other disease, it is not justifiable to regard these as cases of secondary anemia. 5. The clinical features of the condition are sufficiently definite to warrant this being looked upon as a primary disease, to which the name splenic anemia of infancy may be given. In conclusion, I have only to thank Dr. Lovell Gulland for much help in examining the organs of the fatal cases. The sections were prepared for me in the laboratory of the Royal College of Physicians of Edinburgh."

12.—Melland reports cases and discusses the pathology of the disease, especially the blood changes.

14. **Anti-Typhoid Inoculation.**—The utility of anti-typhoid inoculation has been studied by Wright and he finds that the statistics show that there was at least a two-fold reduction in the incidence of typhoid fever in the inoculated among the soldiers in South Africa during the war, as compared with the uninoculated. In some statistics there even a reduction of six-fold or more and the proportion of deaths of cases among the inoculated was approximately half that among the uninoculated. There is, however, a risk to be considered in cases where the patient's resistance is naturally low or has been reduced as often happens by a previous attack or where the patient is inoculated with a full dose of vaccine in actually infected surroundings, or where the patient is inoculated with an excessive dose and is reinoculated too soon, the system may be left more open to infection when it needs protection most. Certain facts set out in his tables seem to indicate the reality of this risk, and an attempt should be made to minimize it by working out a method of standardization of the vaccine, and by studying the blood in the typhoid convalescent and gradual success or failure of the process of immunization in the actual typhoid attack.

18. **Urine Albumin.**—From his experiments, made by injections of serum and kidney substance of rabbits into guinea-pigs and of guinea-pigs into rabbits, Aschoff finds that the results tend to confirm Mertens' experiments and to support the view that the albumin present in nephritic urine is different from the specific kidney albumins.

19. **Gastro-Jejunostomy.**—Hall recommends working through the gastro-colic omentum in making posterior anastomosis between the stomach and the jejunum. He reports cases thus operated on and finds that it is an easy and rapid method combining the advantages of both the anterior and posterior routes and affords most efficient drainage of the stomach, even when the patient is lying on his back.

20. **Cholera.**—The diagnostic and prognostic value of the leucocyte count has been studied by Rogers, who thinks that there is a definite relationship between the decrease of the percentage and the total number of large mononuclear cells and the severity of the disease. The low percentage and proportionately low total count of leucocytes is a characteristic feature. He holds that the proved leucocyte changes have considerable value in the diagnosis and prognosis of the disorder.

21. **Environment and Malaria.**—O'Connell argues for the importance of meteorologic conditions, especially the moisture in malaria, and summarizes his views as follows: "1. Cases of fever, clinically identical with malaria, occur in the blood, of which parasites could not be found after repeated search before quinin had been given. 2. The meteorological environment found where such cases occur, and, indeed, in all malarial climates, increases the amount of water in the blood of those exposed to its influence by impeding elimination through the skin and lungs (evaporation—heat loss) and through the kidneys. 3. There is known to be increase of water in the blood of those suffering from ague (Liebermeister). 4. Increase of water in the blood increases metabolism—i. e., heat production—and produces a rise of body temperature (Payne). 5. As environment thus causes diminished heat loss from the body and increased heat production within the body it is plain that it causes pyrexia. 6. This pyrexia must be of intermittent variety as the environment which produces it is of intermittent intensity—i. e., undergoes diurnal variation. 7. Elimination of water from the blood (sweat) in ague reduces the temperature to normal. 8. Increase of water in the blood produces poikilocytosis, pseudo-parasites, liberation of hemoglobin, extensive destruction of red blood corpuscles, and melanemia. 9. An extreme degree of these changes obviously leads to hemoglobinuria. 10. Increase of water in the blood produces enlargement of the spleen. 11. Removal from the environment that produces increase of water in the blood usually cures ague. 12. All treatment of ague which is efficacious reduces the amount of water in the blood. 13. From these facts I think it is not unreasonable to conclude that those cases of ague or intermittent fever in which no parasites can be found are demonstrably due to the environment under which they arise."

29 and 31. **Role of the Bacterial Envelope in Agglutination.**—Nicolle is inclined to ascribe great importance to the enclosing membrane of bacteria in respect to the phenomenon

of agglutination. He has also become convinced that every agglutinatable microbe is motile. In testing water, all motile microbes resembling the typhoid bacillus but not agglutinated by typhoid serum, can be discarded. Successive cultures of the non-agglutinating and non-motile bacteria at a comparatively low temperature will restore their motility and their agglutinatable and agglutinogenic faculties at the same time. This restoration occurred constantly in all his tests. Defalle has also come to the conclusion that, other things being equal, the greater the development of the envelope of bacteria, the greater their ability to induce an organic reaction, and the production of antibodies will be more abundant and more sensitive. Bacilli that have lost their flagella or mucous capsule confer very little agglutinating power and agglutinate but little. The bacteria with ciliated envelopes are most susceptible to the action of agglutinins.

48. **Parasite Found in the Blood of Epileptics.**—Bra found in 70 out of 100 cases the microbe he describes. Rabbits inoculated with it died in clonic convulsions. The number of the "neurococci," as he calls them, increased with an impending seizure and diminished again afterward, until none could be found during the intermissions.

53. **Tuberculous Cirrhosis in Children.**—The purely portal origin of the ascites in the two cases reported by Baudouin was demonstrated by the laparotomy which disclosed that the peritoneum was intact, and also by the success of the operation establishing anastomosis between the portal and the cava systems. This cured the ascites. The primary tubercular cirrhosis developed with cardiac symptoms and only at a later stage were the three serous membranes simultaneously invaded. The clinical course and the autopsy in each case confirmed the correctness of this assumption.

72. **Fatigue of the Tendon Reflexes.**—Bechterew attributes considerable significance to the fatigue of the knee-jerk. During convalescence from myelitis or during the development of tabes and neuritis, the readiness to fatigue is an aid for the prognosis. It is favorable when the knee-jerk becomes fatigued and weaker even to final abolition, but after an interval of recuperation, is pronounced once more. But if the readiness to fatigue increases and the reflex fails to recuperate promptly, the prognosis is unfavorable.

78. **Toothpick Method of Treating Lupus.**—Richter has slightly modified Unna's original method of treating isolated lupic nodules. He uses toothpicks made of beech wood impregnated with the liqu. stibii chlorati, which takes up the fluid well and penetrates readily into the lupic lesions but is arrested by sound tissue. The necrosed plug drops out in three or four days, and he then fits a plug of 33 per cent. orthoform cotton in its place. The cotton after fifteen minutes is then moistened with one or two drops of the same caustic and the spot covered with plaster. In two to four days more the desired necrotization is complete and the patch heals under sublimate-lead water. For nodules on the nose or near the eyes, a thorn answers better than a toothpick as it is less painful.

79. **Stypticin as an Antiphlogistic.**—Kaufmann summarizes the results of his experience in the statement that stypticin salve has a marked action on acute cutaneous inflammations, but it fails in chronic cases.

81. **Differential Diagnosis of Syphilis and Drug Eruptions.**—Berliner relates a number of puzzling cases of drug eruptions which suggested syphilitic lesions. The onset is usually more sudden than with the latter, and the intensity rapidly subsides. A protracted course is usually due to the conscious or unconscious continuance of the drug or article of food causing the disturbance. He saw a case of exanthem suggesting scarlet fever, induced by ingestion of oysters, vanish completely in four hours, and an eruption over the entire body after eating "Leberwurst" vanished in ten hours without leaving a trace, while tumors and gangrenous ulcers caused by iodin may require weeks for their complete healing. Syphilitic lesions seldom occur with itching, smarting, nausea and fever like the drug eruptions. Still more exceptional is the rapid onset and rapid extension of syphilitic lesions in the mouth such as are observed in the buccal lesions that may follow internal ingestion of antipyrin. Antipyrin, migränin and salipyrin may induce an exanthem on the penis and scrotum, but the onset is more sudden than is observed in case of syphilis. Suspension of the drug will promptly differentiate a drug eruption in most cases. Where there is the least doubt the physician should enquire in regard to recent medication and ingestion of oysters, crabs, strawberries, sausage, alcohol, etc. In one of his cases undoubted syphilis had been aggravated to a remarkable extent by iodid treatment. Gangrenous ulcerations had developed at various points, but all healed promptly under mercurial inunctions and sulphur baths. He concludes by reviewing 25 communications in literature on the subject.

84. **Permanent Results of Sanatorium Treatment.**—Reiche had occasion to examine 2273 persons for tuberculosis. Of this number 1571 were referred for a course of sanatorium treatment for at least four weeks and some required a second and third course, so that 1773 courses were given in all. He tabulates the results six to seven years after the first course and finds that 52.7 per cent. have had their full working capacity restored. Only in 118 of the patients was there complete disappearance of all objective alterations in the lungs, and in 60 per cent. of these there was recurrence of the symptoms in the course of the following years.

85. **Diagnosis of Congenital Predisposition to Tuberculosis.**—Sticker describes and illustrates a simple apparatus which he calls the thoraco-dynamometer. It registers the maximal reserve energy that can be applied to a single inspiration and the curve of encroaching fatigue. With its aid it is possible to detect abnormal tendencies in the lungs of the young or at any age, and thus avert serious consequences by altering the mode of life, business, etc., to favor deficient organs.

88. **Cinnamic Acid in Treatment of Tuberculosis in General Practice.**—Katzenstein has been treating a large number of cases of incipient tuberculosis, apical catarrh, with cinnamic acid according to Landerer's directions. (See THE JOURNAL, xxxiv, p. 1010, and xxxvi, p. 928). He prefers to make the injections in the middle third of the triceps and has found this method peculiarly suited for general office practice. His success has been so pronounced and so constant, that he considers it the best method known for treatment of patients of this class who are unable to enter a sanatorium. The mother can be cured of her incipient tuberculosis without leaving her children, and the business man without leaving his business, although all have to spare themselves as much as they can, go to bed early, sleep late and lie down an hour or two in the afternoon, etc. He concludes that any practitioner who has given this exceptionally fine remedy a thorough trial in such cases will cling to it thereafter, as he observes the vanishing of fever and night sweats, the gradual cessation of cough and expectoration and the increase in weight and improvement in spirits in nearly every case without exception. The number of injections needed varied from 20 to 72 and the duration of treatment from two to six months in his cases. He details the particulars of a number.

92. **Early Diagnosis of Congenital Luxation of Hip-Joint.**—Bade has noticed that the groove in the thigh of infants caused by the adductor muscles is always symmetrical in normal children. In case of congenital dislocation or even a tendency to it, the groove on that side is slightly higher so that the lower ends of the furrows do not meet when the legs are brought together. If this observation is confirmed by the experience of others, it will prove a valuable aid for the early differentiation and correction of congenital dislocation of the hip before the child learns to walk.

95. **Relations of Exercise and Albumosuria to Each Other and to Fever in Phthisis.**—Schröder relates a number of repeated tests on persons with and without tuberculosis, to study the problems suggested in the title. He became convinced that the increase in the rectal temperature after exercise is exclusively a local hyperthermia due to congestion of blood in the parts from the exercise of the legs. It is not at all pathognomonic of tuberculosis. He observed albumosuria only in cases

of advanced tuberculosis with considerable disturbance in the metabolism. It never accompanied the rise in rectal temperature after exertion in otherwise afebrile persons. In afebrile tuberculous subjects the difference between the mouth and rectal temperature was normal, but in persons with variable or subfebrile temperature the difference was greater.

96. **Genesis of Pulmonary Tuberculosis.**—Schmorl reports that in 15 out of 2300 autopsies he found evidences of hematogenic tuberculosis with localizations in spleen, kidneys or liver, and in the lungs. The pulmonary lesions were not in the apices but lower down. The apices were exempt in all but 2 and in these the lesions were insignificant compared with those elsewhere. In another series of 42 out of 4000 autopsies he found conclusive indications that the infection had occurred by way of inhalation.

101. **Expulsion of Tenia.**—As stated in the original title Sobotta has tried to avoid the intoxication that sometimes follows the combination of castor oil with the vermifuge. He has learned from an experience of eleven cases and from a review of others, that the best means of accomplishing this and expelling a tapeworm is to give a large dose of castor oil first, then follow with 7 or 8 gm. of extract of filicis and drive it rapidly through the body with some other purgative such as senna, not castor oil.

105. **Nursing Bottles that Separate into Halves.**—The bottle separates horizontally into two halves in the middle. Each half has a ground glass finish for a width of one to three inches from the edge so that the two parts fit in together watertight, like a glass stopper in a bottle. The two halves are held together by a small chain and spiral spring on each side which extends from the neck of the bottle to a round, flat metal plate on which the bottle stands. The action of the springs holds the parts firmly together, but the bottle can be taken apart and each half cleansed separately as easily as a bowl.

110. **Treatment of Bubo.**—Cedercreutz says that in at least one-seventh of all cases of inguinal buboes the venereal cause can not be established. They should be treated as far as possible by conservative-expectant measures, especially bags of hot sand, alcohol bandages over zinc paste, dressings with aluminum acetate and, in the very earliest stages, ice bags. When suppuration has set in, and especially in case a single gland is involved, a small incision followed by one or more injections of a 1 or 2 per cent. solution of silver nitrate or better still in most cases, of 10 per cent. iodoformed vaselin, will be found effective. About 75 to 80 per cent. of the cases treated on this plan heal without necessity for extensive operative intervention. Curetting and tamponing with iodoform gauze is the last resort, or total excision of the gland. It requires in this case four to six weeks to heal while with the other measures it heals in about two weeks.

112. **Treatment of Chronic Gonorrhea.**—The gonococcus burrows into the depths, and consequently treatment to be effectual must first dislodge them. Cohn has found that this is best accomplished by preliminary dilation of the urethra, which is a kind of massage. The chief danger in chronic gonorrhea is the participation of the prostate in the process, and especial attention should be paid to prophylaxis of this complication.

114. **Suprarenal Snuff for Coryza.**—Goldschmidt makes a powder of 5 to 10 cg. of dried suprarenal extract to 5 gm. of any neutral powder, to use as a snuff in cases of coryza, thus making practical application of the well-known properties of the extract. The powder has the same effect as the solution. He calls the snuff "renoform."

115. **Collargol and Ichthyol Salve.**—Franke has found these salves very useful as antiphlogistics. He has derived great benefit from a 10 per cent. sebum ichthyol salve rubbed on the back in cases of inflammation of the lungs. He applies it nearly half an inch thick, covering a space the size of two palms, with a wet pack over it for an hour to ninety minutes two or three times a day. The disease process is attenuated or completely aborted by the second day, both in children and adults.

116. **Therapeutic Injection of Air in Neuralgia.**—Hester had an unfortunate experience with the injection of air recommended recently as a means of combating neuralgia. The patient was a man of 47, with violent and long rebellious neuralgia of right arm and shoulder. About 200 c.c. of air were injected above the scapula, but the pain was immeasurably aggravated for five days, after which conditions remained the same as before the injection.

121. **Importance of Phosphorus in Yolks of Eggs in Infant Feeding.**—Cronheim has been much impressed with the benefit derived by infants from phosphorus administered in the form of the yolks of eggs. He advises commencing early to add it to the diet.

123. **Physiologic Study of Massage.**—Ruge states that five minutes' massage will allow a fatigued muscle to recuperate better than ten to twenty minutes' rest. The power of a muscle can be increased three to seven fold over its last effort by five minutes' massage. After massage a much greater stimulus is required to induce tetanus than previously, especially in muscles that have been fatigued.

125. **Present State of Light Treatment.**—Marcuse summarizes the present achievements in this line as: 1, Finsen's treatment of lupus is an absolute specific; 2, local treatment with light, with the exception of lupus, is a still unsolved problem; 3, general treatment with arc lights is a measure for the psychic influencing of functional nervous affections, and 4, general incandescent light treatment is merely a method of applying heat, but has proved to be the best method at our disposal for inducing perspiration.

133. **Antitoxic Potency of the Thyroid Gland.**—Remedi injected various toxins directly into the thyroid gland of dogs, avoiding traumatism as much as possible. He found that diphtheric toxin and also bacterial nucleo-proteids caused an increase in the secretory activity of the gland, but failed to produce any processes of inflammation or necrosis such as follow their injection into other noble tissues. He suggests the possibility that the gland exerts an antitoxic action which neutralizes the toxin and prevents the development of otherwise inevitable necrotic processes.

New Patents.

Patents of interest to pharmacists, etc., September 2 and 9:

708,452. Dilator. Ernst Beist, Magdeburg, Pa.
708,322. Invalid bed. Ella B. Dones, Cincinnati.
708,216. Electromedical appliance. Jonathan O. Fowler, Jr., New York.
708,340. Fracture apparatus. Joseph P. Gordon, Rockford, Ill.
708,224. Syringe. Frank C. Gundlach and W. R. Ludewig, Pittsburg, Pa.
708,365. Electromedical appliance. John H. and A. T. Kliegl, New York.
708,371. Bed-pan cover. Helen C. Lipps, Boston.
708,068. Surgical appliance. Philip H. T. Paulinetti, Philadelphia.
708,402. Abdominal and back-supporter. Howard C. and L. C. Rash, Salinas, Kan.
708,975. Baker's oven. Charles E. Glafke, Los Angeles.
708,659. Soda-water dispensing fountain. Morris H. Petigor, New York.
708,738. Pasteurizing apparatus. Baldwin F. Schirmer, Indianapolis.
708,953. Catamenial sack. Mattie M. Spaulding, Chattanooga, Tenn.
708,685. Artificial limb. Charles P. White, Spencer, N. C.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 4 to 10, 1902, inclusive:

Robert M. Blanchard, lieutenant and asst.-surgeon, U. S. A., leave of absence for one month granted.

Louis Brechenim, major and surgeon, U. S. A., member of an Army retiring board convened at Manila, P. I.

W. Fitzhugh Carter, major and surgeon, U. S. A., leave of absence for one month and five days granted.

Carl R. Darnall, captain and asst.-surgeon, U. S. A., relieved from further duty at Plattsburg Barracks, N. Y., to report to the Surgeon-General for duty in his office; he is detailed as recorder of the board in session at the Army Medical Museum for the examination of candidates for admission into the Medical Corps of the Army.

William H. Forwood, surgeon-general, U. S. A., retired from active service, Sept. 7, 1902, by operation of law, he having attained the age of 64 years.

Harry M. Hallock, captain and asst.-surgeon, U. S. A., member of an Army retiring board convened at Manila, P. I.

Frederick E. Jenkins, contract surgeon, member of an examining board at Fort Barrancas, Fla., vice Major William D. Crosby, surgeon, U. S. A., relieved.

Samuel E. Lambert, lieutenant and asst.-surgeon, U. S. A., from Fort Morgan, Ala., to duty at Washington Barracks, D. C.

Charles E. Marrow, lieutenant and asst.-surgeon, U. S. A., relieved from duty on the transport *Hancock*, and on the expiration of his present leave of absence will report for duty at Fort Sheridan, Ill.

James V. May, contract surgeon, from Fort Strong, Mass., to his home, Philadelphia, for annulment of contract.

Harry S. Purnell, lieutenant and asst.-surgeon, U. S. A., to proceed to Fort Riley, Kan., for temporary duty pertaining to the military maneuvers to be held at that post, and thereafter to return to his proper station.

Merton A. Probert, contract surgeon, leave of absence extended one month.

Robert E. Sievers, contract surgeon, from Louisville, Ky., to duty at Fort Harrison, Mont.

Cary A. Snoddy, lieutenant and asst.-surgeon, U. S. A., as Lieutenant Purnell, above.

William E. Vose, lieutenant and asst.-surgeon, U. S. A., leave of absence for one month granted.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending September 13:

P. A. Surgeon E. G. Parker, from the *Pensacola*, September 10, and to duty on the *Adams*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the twenty-one days ended Sept. 11, 1902:

Assistant Surgeon-General W. J. Pettus, granted leave of absence for seven days from August 25.

Surgeon John Vansant, placed on waiting orders, to take effect Aug. 20, 1902.

Surgeon H. R. Carter, granted five days' extension of leave of absence from August 29.

Surgeon C. E. Banks, granted leave of absence for one month from September 12.

P. A. Surgeon M. J. Rosenau, to proceed to Vera Cruz, Progreso, Jalapa, Coatzacoalcos, Orizaba and Tampico, Mexico, for special temporary duty, August 23.

P. A. Surgeon Rupert Blue, granted ten days' extension of leave of absence from August 30.

Asst.-Surgeon J. F. Anderson, detailed as Acting Director of Hygienic Laboratory during temporary absence of the Director, P. A. Surgeon M. J. Rosenau.

Asst.-Surgeon L. D. Fricks, granted six days' leave of absence under paragraph 201 of the regulations.

Asst.-Surgeon V. G. Heiser, to proceed to Boston, for special temporary duty.

Asst.-Surgeon V. G. Heiser, relieved from special temporary duty at Washington, D. C., and directed to report to Commissioner-General of Immigration for instruction relative to services as temporary immigrant inspector in Canada.

Asst.-Surgeon D. H. Currie, to rejoin station at 641 Merchant St., San Francisco.

A. A. Surgeon H. J. Beard, granted eighteen days' leave of absence from September 7.

A. A. Surgeon Francis Duffy, granted leave of absence for six days from August 20.

A. A. Surgeon W. J. Linley, granted thirty days' leave of absence on account of sickness.

A. A. Surgeon F. P. Sams, to assume temporary charge of Service at Charleston, S. C., relieving Surgeon John Vansant.

A. A. Surgeon W. L. Savage, granted fourteen days' leave of absence from August 11.

Pharmacist and Chemist F. MacDowell, Department letter of July 31, 1902, granting thirty days' leave of absence from August 2, 1902, amended so that said leave shall take effect from August 16.

Pharmacist and Chemist A. M. Roehrig, detailed to represent the Service at meeting of American Pharmaceutical Association at Philadelphia, September 8, reporting at Bureau en route.

Pharmacist and Assistant Chemist W. L. Stearns, granted twenty days' leave of absence from Sept. 3, 1902.

Pharmacist S. W. Richardson, as Pharmacist Roehrig, above.

Pharmacist C. G. Carlton, granted seven days' leave of absence from Aug. 14, 1902, under paragraph 201 of the regulations.

Assistant Surgeon-General J. H. White, granted leave of absence for seven days from September 7.

Assistant Surgeon-General G. T. Vaughan, detailed to represent the Service at meeting of Medical Society of Virginia, to be held at Newport News, Va., Sept. 23-26, 1902.

Assistant Surgeon-General W. J. Pettus, to proceed to Baltimore, Md., for special temporary duty.

Surgeon D. A. Carmichael, granted two months' leave of absence from September 9.

P. A. Surgeon C. P. Wertenbaker, granted fourteen days' extension of leave of absence from September 6.

P. A. Surgeon A. R. Thomas, granted leave of absence for ten days from September 5, on account of sickness.

P. A. Surgeon L. C. Cofer, leave of absence granted by Department letter of July 29, 1902, amended to take effect from September 10.

Asst.-Surgeon V. G. Heiser, granted leave of absence for fifteen days.

Asst.-Surgeon T. D. Berry, granted two months' extension of leave of absence from September 3, on account of sickness.

Asst.-Surgeon B. J. Lloyd, relieved from duty at Nome, Alaska, on closure of navigation, and directed to proceed to San Francisco Quarantine, and report to medical officer in command for duty.

A. A. Surgeon C. W. Bailey, granted ten days' leave of absence from August 27.

A. A. Surgeon Hugh Burford, granted leave of absence for twenty-eight days from September 5.

A. A. Surgeon A. C. Fraser, granted ten days' leave of absence from September 15.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for seven days from September 16.

A. A. Surgeon R. H. McGinnis, granted thirty days' leave of absence from October 1.

A. A. Surgeon W. C. Mason, granted leave of absence for five days from September 15.

Pharmacist E. B. Scott, granted leave of absence for nineteen days from September 6.

BOARDS CONVENED.

Board convened at Washington, D. C., August 27, to revise regulations governing the Service. Detail for the Board: Assistant Surgeon-General George Purviance, chairman; Assistant Surgeon-General L. L. Williams; Surgeon A. H. Glennan; Surgeon P. M. Carrington; Asst.-Surgeon B. S. Warren, recorder.

Board convened at Stapleton, N. Y., September 11, for the purpose of examining revenue cutter officers on that date, and from time to time thereafter. Detail for the Board: Surgeon P. H. Bailhache, chairman; P. A. Surgeon A. C. Smith; Asst.-Surgeon A. F. Stimson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General Public Health and Marine-Hospital Service, during the week ended Sept. 13, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 18-31, 18 cases, 18 deaths.
Colorado: Denver, Aug. 23-30, 4 cases.
Massachusetts: Aug. 30-Sept. 6, Boston, 8 cases, 2 deaths; Cambridge, 1 case; Quincy, 1 case.
Michigan: Ludington, Aug. 23-30, 2 cases.
Minnesota: Minneapolis, July 5-26, 4 cases; Aug. 3-16, 2 cases.
Missouri: St. Louis, Sept. 1-8, 1 case.
Montana: Butte, Aug. 31-Sept. 7, 1 case.
Nebraska: Omaha, Aug. 31-Sept. 6, 3 cases.
New Hampshire: Manchester, Aug. 31-Sept. 6, 2 cases.
New Jersey: Camden, Aug. 30-Sept. 6, 2 cases, 2 deaths; Hudson County, Jersey City included, Aug. 24-Sept. 7, 3 cases; Newark, Aug. 30-Sept. 6, 5 cases, 2 deaths; Plainfield, Aug. 30-Sept. 7, 1 case.
New York: New York, Aug. 30-Sept. 6, 12 cases.
Ohio: Ashtabula, Aug. 30-Sept. 6, 1 case; Cincinnati, Aug. 29-Sept. 5, 1 case; Cleveland, Aug. 30-Sept. 6, 84 cases, 13 deaths; Dayton, Aug. 30-Sept. 6, 1 case; Youngstown, Aug. 23-30, 1 case.
Oregon: Portland, Aug. 1-31, 4 cases.
Pennsylvania: Butler, Aug. 14-21, 1 case imported; Johnstown, Aug. 30-Sept. 6, 7 cases, 1 death; McKeesport, Aug. 31-Sept. 6, 3 cases; Philadelphia, Aug. 30-Sept. 6, 2 cases, 1 death; Pittsburg, Aug. 30-Sept. 6, 19 cases.
South Dakota: Sioux Falls, Aug. 30-Sept. 6, 1 case.
Tennessee: Memphis, Aug. 30-Sept. 6, 1 case.
Utah: Ogden, Aug. 1-31, 6 cases; Salt Lake City, Aug. 23-Sept. 6, 3 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 9-23, 1 case.
Brazil: Pernambuco, July 24-31, 11 deaths.
Belgium: Brussels, Aug. 16-23, 1 case.
Gibraltar: Aug. 18-24, 1 case.
Great Britain: Dublin, Aug. 23, 1 case; Liverpool, Aug. 9-23, 17 cases, 3 deaths; London, Aug. 16-23, 18 cases, 3 deaths.
Greece: Athens, Aug. 16-23, 1 death.
India: Bombay, Aug. 4-12, 6 deaths; Calcutta, Aug. 2-9, 1 death.
Italy: Naples, Aug. 9-23, 7 cases, 1 death; Palermo, Aug. 16-23, 3 cases, 2 deaths.
Russia: Moscow, Aug. 9-16, 6 cases, 1 death; St. Petersburg, Aug. 9-16, 2 deaths.
Straits Settlements: Singapore, July 12-26, 4 deaths.
Venezuela: Valencia, Aug. 25, present.

YELLOW FEVER.

Colombia: Panama, Aug. 25-Sept. 1, 5 cases.
Costa Rica: Port Limon, Aug. 21-28, 1 case.
Cuba: Havana, Sept. 1, 1 case from S. S. *Monterey*, from Vera Cruz.
Mexico: Coatzacoalcos, Aug. 23-30, 4 cases; Progreso, Aug. 16-23, 1 case, 1 death; Vera Cruz, Aug. 19-25, 22 cases, 12 deaths.
Venezuela: Valencia, Aug. 25, present.

CHOLERA—INSULAR.

Philippine Islands: Manila, June 22-July 12, 820 cases, 604 deaths; Provinces, June 22-July 12, 5,343 cases, 4,126 deaths.

CHOLERA—FOREIGN.

China: Amoy, Aug. 2-19, 15 cases estimated; Hongkong, Aug. 22-29, 8 cases, 7 deaths.
Egypt: Cairo, Aug. 9-16, 1 death.
India: Calcutta, Aug. 2-19, 18 deaths; Karachi, Aug. 3-10, 8 cases, 8 deaths.
Japan: Tokyo, July 27-Aug. 2, 2 cases; Okayama, July 29-Aug. 3, 224 cases.
Russia: Amur District, July 16-22, 123 cases, 68 deaths; Charbin, June 14-20, 112 cases, 44 deaths; Girin, July 14-20, 175 deaths; Inkow, July 6-17, 128 cases, 106 deaths; Mudken, July 12-15, 87 cases, 73 deaths; Manchuria, to July 19, 54 cases, 24 deaths; Vladivostock, Aug. 14, 4 cases; Zizikar, July 11-13, 57 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Aug. 20-31, 6 cases, 6 deaths.

PLAGUE—FOREIGN.

Brazil: Pernambuco, July 9-23, 4 deaths.
Egypt: Cairo, Aug. 9-16, 2 cases, 1 death.
India: Bombay, Aug. 5-12, 27 deaths; Calcutta, Aug. 7-14, 15 deaths; Karachi, Aug. 3-10, 3 cases, 3 deaths.
Russia: Odessa, to Aug. 22, 9 cases, 1 death.